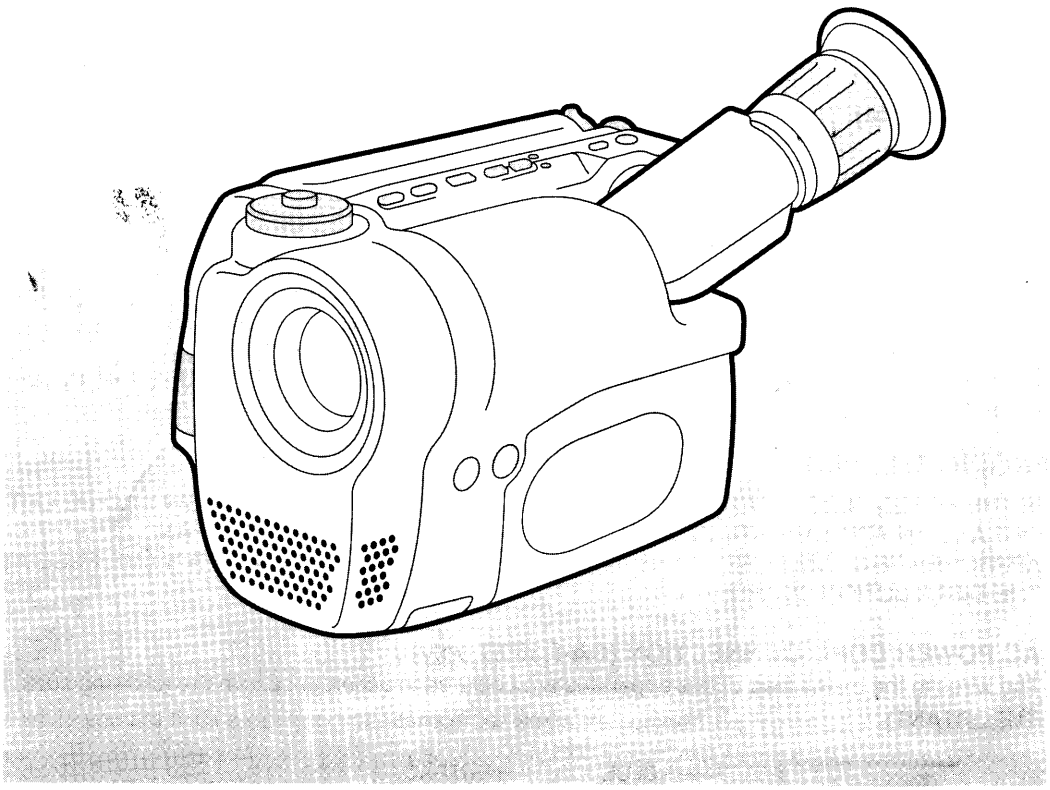
8mm VIDEO CAMCORDER

Instruction Manual



Canon

Hi8

UC-X10Hi/UC-X15Hi*

P (PAL)

* Available only in certain areas.

Important Usage Instructions

CAUTION:

TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

WARNING:

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE.

CAUTION:

TO REDUCE THE RISK OF ELECTRIC SHOCK AND TO REDUCE ANNOYING INTERFERENCE, USE THE RECOMMENDED ACCESSORIES ONLY.

CAUTION:

CUSTOMERS IN THE U.K. SHOULD READ THIS BEFORE USING THIS PRODUCT.

CHANGING THE FUSE

THE MAINS LEAD ON THIS PRODUCT IS FITTED WITH A NON-REWIREABLE (MOULDED) PLUG, INCORPORATING A 3 AMP FUSE. SHOULD THE FUSE NEED TO BE REPLACED AN *ASTA* OR *BSI* APPROVED BS1632 FUSE OF THE SAME RATING MUST BE USED.

ALWAYS REFIT THE FUSE COVER AFTER REPLACING THE FUSE. NEVER USE THE PLUG WITH THE FUSE COVER OMITTED.

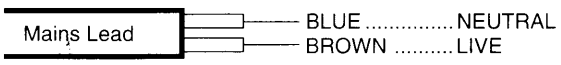
CHANGING THE PLUG

IF THE FITTED PLUG IS NOT SUITABLE FOR YOUR SOCKET OUTLETS, IT SHOULD BE CUT OFF AND AN APPROPRIATE PLUG FITTED IN ITS PLACE. IF POSSIBLE FIT AN APPROPRIATE 3 AMP FUSE. IF THE NEW PLUG HAS NO FUSE, THEN FIT A 5 AMP FUSE AT THE DISTRIBUTION BOARD.

AC POWER CORD CONNECTION (CA-R300B only)

The wires in the mains lead of this apparatus are coloured in accordance with the following cord.

(IMPORTANT)



As the colours of the wires in the mains lead may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows: The wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or coloured black. The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured red. Neither Blue wire or Brown wire is to be connected to the Earth pin of a 3 pin plug.

THE SEVERED PLUG MUST BE DESTROYED IMMEDIATELY TO AVOID ANY POSSIBLE ELECTRIC SHOCK HAZARD.

Thank you for choosing a Canon

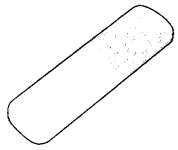
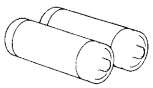
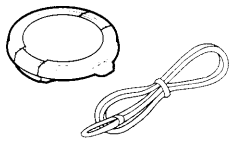
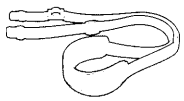
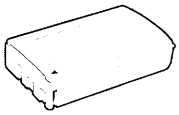
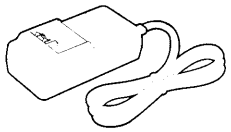
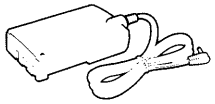
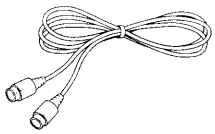
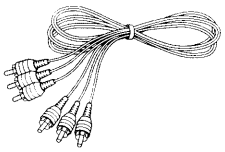
First, we'd like to thank you for buying this Canon camcorder. Its advanced technology makes it very easy to use — you will soon be making high-quality home videos which will give you pleasure for years to come.

To get the most out of your new camcorder, you should read this manual thoroughly — there are many sophisticated features which will add to your recording enjoyment.

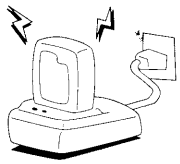
To get started, you will need to read these sections:
"Basic Recording"
"Power Sources"
"Cassettes"
"Preparing the Camera"
Then you can go on to find out about the more advanced features.

As well as using the alphabetical index, you can look up the different parts and functions in the sections called "Nomenclature" and "Viewfinder Displays." There's also a "Troubleshooting" section in case you run into any problems.

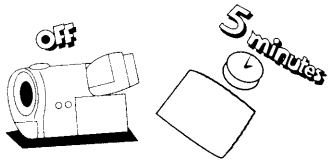
Check that this package contains the following accessories:

WL-61 Wireless Controller 	Two R6 AA batteries 	Lens cap and lens cap cord 	SS-300 Shoulder Strap 
BP-711 Battery Pack 	Lithium battery (CR2025)	CA-R300 Compact Power Adapter 	DC-100 DC Coupler 
S-150 S-video Cable 	STV-150 Stereo Video Cable 	PC-A10 SCART Adapter (Europe, Asia)	

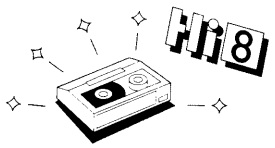
And while you are finding out how your camcorder works, remember:



The battery pack must be charged before it can power the camcorder.



If you leave the camera in record pause mode for more than about five minutes, it will turn itself off to prevent the video heads being damaged.



If you want the superior picture quality of Hi8, you have to use Hi8 tapes. If you use standard 8mm cassettes, you will get standard 8mm recordings.

Introducing the UC-X10Hi/UC-X15Hi

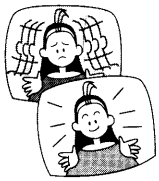
FlexiZone Control

Easier than manual operation and more flexible than automatic functions, Canon's FlexiZone Control is a completely new way to use a video camera.

22X lens

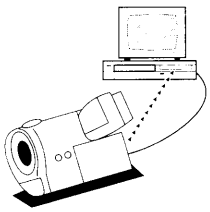
From wide-angle to world-beating 22X telephoto — with unparalleled optical quality.

Optical Image Stabilizer



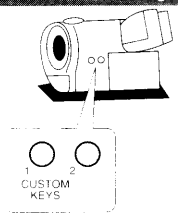
Canon's revolutionary optical technology stabilizes your recordings even at the furthest reaches of the zoom range. Unlike ordinary electronic stabilizers, it causes zero loss of picture quality.

Auto Editing Function



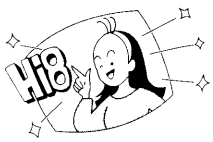
The UC-X10Hi/UC-X15Hi comes with a complete set of editing functions built-in. Now you can do sophisticated and convenient editing without a costly, bulky separate editing machine.

Custom Keys



With the unique Custom Keys, you, the user, can decide which functions you want at your fingertips. Assign the functions you use most frequently to the conveniently-placed keys on the camera body.

Hi8



With around 400 lines of horizontal resolution, Hi8 is the format that video professionals choose when they want high quality, long recording times and compact size.

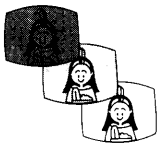
Hi-fi stereo sound

The stereo microphone provides audio depth and realism that adds drama and ambience to your images. A built-in wind screen cuts wind noise to a minimum.

Powerful recording programs

Six recording programs deal with everything from simple point-and-shoot operation to the most challenging recording conditions.

Fade



Add an atmospheric touch to your video productions with smooth fades, synchronised with the soundtrack.

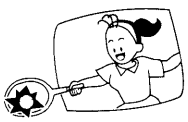
Titles

You don't need any extra equipment to add titles to your home videos — the camera does it all.

Remote control

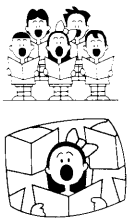
The supplied wireless controller operates both recording and playback from as far away as 5 metres (16 ft).

Manual shutter



For advanced image control, choose from eight different shutter settings. A top speed of 1/10000 second lets you capture even the quickest action.

Colour viewfinder (UC-X15Hi)



You don't have to wait until playback to see your shots in colour. Thanks to the UC-X15Hi's high-resolution LCD viewfinder, you can see just what you're getting on tape, making it easy to shoot colourful, well-composed video.

Contents

Introduction

Important Usage Instructions 2
Thank you for choosing a Canon 3
Introducing the UC-X10Hi/UC-X15Hi 4

Basic Operation

Basic Recording 6
Power Sources 7
Cassettes 11
Preparing the Camera 12
Playback 13
Playback Connection 14

Advanced Functions

Zooming 17
Wireless Controller 18
Using the Menus 19
Custom Keys 20
Date and Time 21
Titles 22
Fade 23
Choosing a Recording Program 24
Setting the FlexiZone 26
Focusing 26
Exposure Control 28
Manual Shutter 29
Record Search 30
Record Review 31

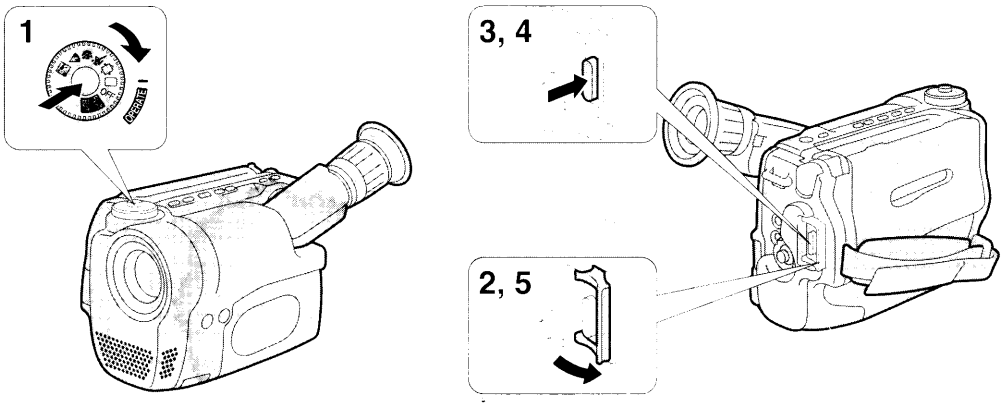
Editing

The Auto Editing Function 32
Preparations 33
Using the Auto Editing Function the first time 34
SET Function 35
PREVIEW/START Function 36
CUT-IN/CUT-OUT Time Adjustment 37
Editing Scenes 38
CLEAR/DELETE Function 39
Reordering Scenes 40
Simple Editing to a VCR 41

Additional Information

Making Better Videos 42
UC-X10Hi/UC-X15Hi Video System 43
Optional Accessories 44
Cautions and Maintenance 47
Troubleshooting 49
Viewfinder Displays 51
Nomenclature 53
Specifications 55
Index 56

Basic Recording



Before you start recording

Complete the following steps:
- Attach a power source (p. 7).
- Load a cassette (p. 11).
- Adjust the viewfinder, fasten the grip belt and take off the lens cap. (p. 12).

You may also want to install the backup battery (p. 10) in order to set the date and time display (p. 21).

To record

1. **Turn the program selector to ☐.**
   - Press and hold the lock button.
   - This selects the camera's Easy Recording program. It allows you to simply point and shoot without making any manual adjustments.
2. **Open the STANDBY cover.**
   - The camera operation indicator lights up red, and PAUSE appears in the viewfinder — the camera is now in "record pause mode."
3. **Press the start/stop button to begin recording.**
   - The tally lamp flashes rapidly and REC appears in the viewfinder.
4. **Press the start/stop button again to pause recording.**
   - The camera returns to record pause mode and PAUSE reappears in the viewfinder.
   - You can stop and restart recording as often as you like by pressing the start/stop button.
   - The camera will turn itself off if you leave it in record pause mode for more than about five minutes. To return to record pause mode, close and reopen the STANDBY cover, or turn the program selector to OFF and then back to ☐.
5. **Close the STANDBY cover.**
   - As long as the program selector is set to a recording program, you can use the STANDBY cover to turn the camera on and off. This makes it easy to save battery power, and prevents accidental operation of the start/stop button.

When you have finished recording

- Replace the lens cap.
- Unload the cassette.
- Turn the program selector to OFF.
- Disconnect the power source.

Notes:
- Before making important recordings, clean the video heads using a Canon CC-8 Video Head Cleaning Cassette or a commercially available dry-type head cleaning cassette.
- If you turn off the camera using the STANDBY cover, it will remember your chosen focus and shutter speed settings in the FlexiZone Recording program (see p. 24), and whether or not a title was displayed. If you turn the program selector to OFF and back again, these settings are erased from the memory.
- You can set one (or both) of the Custom Keys to operate as an extra start/stop button. (See p. 20 for details.) This is especially useful for low-angle recording, when you hold the camera by your waist.
- When recording from the start of the tape: For best results, let the tape run for about ten seconds according to the counter. Then record from that point. This avoids losing the beginning of the tape when played back on another machine.
- Before making important recordings, clean the video heads using a Canon CC-8 Video Head Cleaning Cassette or a commercially available dry-type head cleaning cassette.

Power Sources

Before operating your camera, you will need to use the power adapter to:

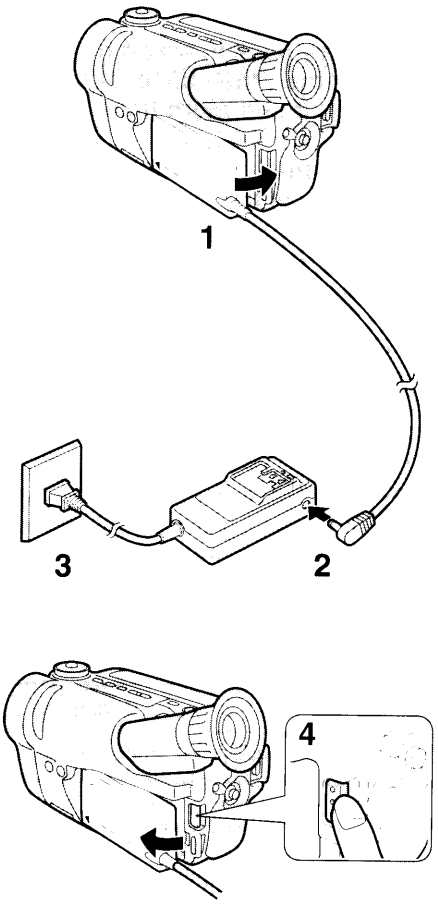
provide power from a mains outlet
or
charge a battery pack

Notes:
- The power adapter converts current from a household mains outlet (100–240 V AC, 50–60 Hz) to the DC current used by your camera.
- If the adapter is used next to a TV, it may cause the TV to emit noise — move the adapter away from the TV or the aerial cable.

Connecting the camera to a mains outlet

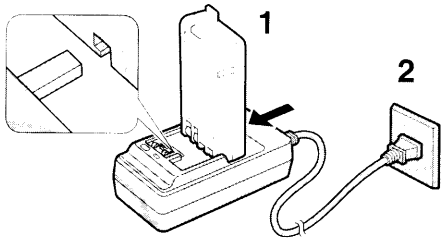
Use the power adapter and the DC coupler to provide your camera with instant power from a mains outlet.

1. **Insert the DC coupler in the camera's power source compartment.**
   - Insert the front end first, then press in the DC coupler until it clicks and locks into place.
2. **Connect the DC coupler to the adapter.**
3. **Plug the adapter into a mains outlet.**
4. **Detach the DC coupler after use.**
   - Press and hold the BATTERY EJECT button while you pull the DC coupler outwards from the rear.
   - Always turn the camera off before removing the power source.

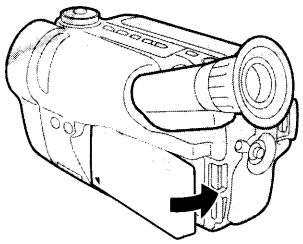


Charging and attaching the battery pack

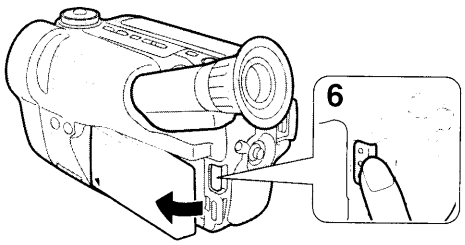
You will have to charge the battery pack before you can use it. A brand new battery pack must be charged twice before use.



1. **Slide the battery pack onto the adapter as shown.**
   - Make sure the DC coupler is not connected.
2. **Plug the adapter into a mains outlet.**
   - The CHARGE/REFRESH indicator flashes red to show that charging is in progress.
3. **Wait until the battery pack is fully charged.**
   - The indicator glows steadily red when the battery pack is fully charged.
4. **If the battery pack is brand new, take it off the adapter, then slide it on again and charge it one more time.**
5. **Take the battery pack off the adapter and attach it to the camera.**
   - Insert the end marked with a triangle first, then press in the battery pack until it clicks and locks into place.



6. **Detach the battery pack after use.**
   - Press and hold the BATTERY EJECT button while you pull the battery pack outwards from the rear.
   - Always turn the camera off before removing the power source.



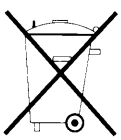
Charging and recording times

BP-711 Battery Pack

Charging time	70 minutes
Continuous recording time	60 minutes

- These times vary — the safest policy is always to have two or three times as many battery packs as you think you will need.

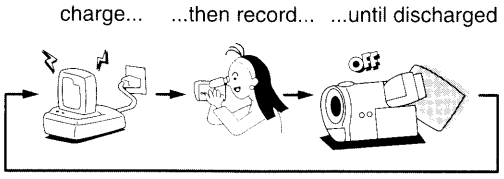
NOTE FOR CUSTOMERS IN THE EUROPE



NICKEL-CADMIUM BATTERY.
MUST BE RECYCLED OR
DISPOSED OF PROPERLY.

Cd

Battery pack notes



Charge the battery pack before you use it...

- You should charge a brand new battery pack twice before using it for the first time — a single charge may not be enough. Charge it completely (until the adapter's charge indicator glows steadily), then disconnect it and charge it again. Normally, you should not "double charge" the battery pack in this way.
- The battery pack will naturally discharge itself over time. You should charge it the same day you plan to use it, or the day before.
- The battery pack becomes warm during use (and during charging). Wait for it to cool before charging or using it again. It may not reach full charge if warm.

...save power while you are recording...

- You will get more recording time from your battery pack if you turn the camera off between shots, instead of leaving it in record pause mode.
- Recording time will be shorter than usual at low temperatures. You can use the battery pack between 0° and 40°C (32°–104°F), but it works best between 10° and 30°C (50°–86°F).

...and don't recharge it until it is exhausted.

- The camera flashes a ⊏▽ warning when the charge has almost run out. After a few more minutes' use, the camera turns off automatically. You can now either recharge or store the battery pack.

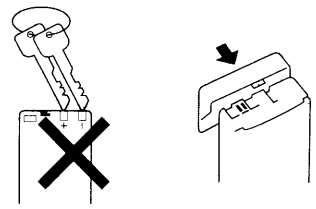
Disconnect the battery pack when you are not using it.

- Even when it is turned off, the camera will continue to slowly drain power from the battery pack. This means the battery pack will be discharged beyond the normal level if you leave it attached for a long time.

Keep the terminals clean.

- The camera, adapter or battery pack will not work properly if the terminals are dirty. Check them before use, and wipe them with a dry cloth or tissue if necessary.

DANGER!



Always attach the terminal cover.

- Do not allow any metal objects to touch the terminals. The battery pack contains a great deal of energy and short-circuiting it may cause a fire. Attach the terminal cover whenever you are not using the battery pack.

Treat the battery pack with care.

- Keep it away from fire (or it might explode).
- Do not try to disassemble or modify it.
- Do not drop or knock it.
- Do not get it wet.

Remember, it may start to give you less recording time...

- If you recharge it without first completely discharging it.
- If you leave it attached to the camera (or a video light) for more than a week.
- If you don't use it for three months or more.

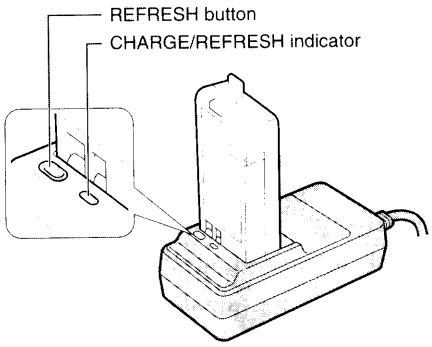
...but you should be able to "refresh" it.

- The power adapter has a refresher function which restores battery packs to full capacity (see p. 10).
- If this does not improve the battery pack's performance, it has reached the end of its life and must be replaced.

The lifetime of nickel-cadmium battery packs

- Nickel-cadmium battery packs produce electrical energy from a chemical reaction, so although they can be recharged, they do not last forever. Even if they are not used, their performance still degrades over time. If the battery pack runs out quickly even after you have "refreshed" it, it has come to the end of its useful life and should be replaced.
- Be sure to fully charge and discharge the battery pack every three months even if you do not otherwise use it.

Refreshing the battery pack



If the battery pack starts to give less recording time, use the adapter's refresher function to restore it to full capacity. The adapter will first discharge the battery pack, and then recharge it.

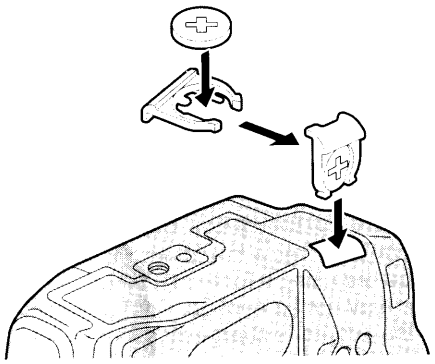
1. **Attach the battery pack to the adapter and plug it into an mains outlet.**
   - See p. 8.
2. **Press the REFRESH button.**
   - The CHARGE/REFRESH indicator flashes green to show that discharging is in progress. When the battery pack is discharged, the indicator begins to flash red and recharging begins.
3. **Remove the battery pack when discharging/recharging has finished.**
   - The indicator glows steadily red when recharging is completed.
   - If you only want to discharge the battery pack, there is no need to plug in the adapter. In this case, you can remove the battery pack when the CHARGE/REFRESH indicator stops flashing green.

Discharge and recharge times

Battery pack	BP-711	BP-729
Discharge	4 hr.	10 hr.
Recharge	1 hr. 10 min.	2 hr. 30 min.
Total refresh charge	5 hr. 10 min.	12 hr. 30 min.

- These times are approximate.

Installing the backup battery



Pull out the battery holder from the base of the camera, and insert the CR2025 lithium battery with the + side facing upwards. Click the holder back into place.

- You may find it useful to use a small screwdriver to ease out the battery holder.

This backup battery allows the camera to remember the date and time and other settings when the main power source is removed. It has a life span of about a year.

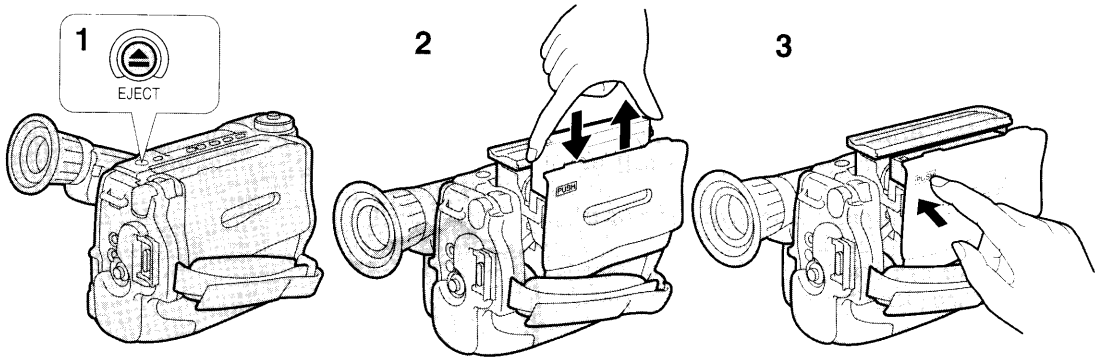
When it needs replacing (or if it has not been installed), the mark flashes in the viewfinder. When you replace the old battery, make sure to attatch a power source to the camera first, and turn it off using the STANDBY cover. This way it will remember your chosen settings when you change the battery.

WARNING!
The battery used in this device may present a fire or chemical burn hazard if mistreated. Do not recharge, disassemble, heat above 100°C (212°F) or incinerate. Replace the battery with a Sony, Sanyo or Panasonic CR2025, or Duracell DL2025. Use of another battery may present a risk of fire or explosion. The used battery should be handed back to the supplier for safe disposal.

Cautions:

- Do not pick up the battery using tweezers or other metal tools — this will cause a short circuit.
- Wipe the battery with a clean, dry cloth to ensure proper contact.
- Keep the battery pack out of reach of children - if it is swallowed, contact a physician immediately, as the battery case may break down and the battery fluids damage the stomach and intestines.
- Do not disassemble, heat, or immerse the battery in water, to avoid the risk of explosion.

Cassettes



Use videocassettes marked with an 8 or Hi8.

Loading and unloading

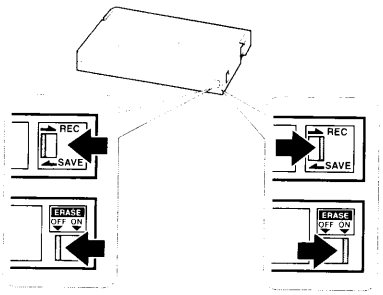
Cassettes can be loaded and unloaded with the camera turned off, as long as a power source is attached.

1. **Press the EJECT ▲ button and wait for the cassette compartment to open.**

2. **Load/unload the cassette.**
   - Insert the cassette gently with the window facing out.
   - Remove the cassette by pulling it straight out.

3. **Press the PUSH mark on the compartment until it clicks, and wait for it to close.**
   - Never push down the top of the compartment.

Preventing accidental erasure



To protect your recordings from accidental erasure, slide the red switch on the cassette so that it covers the hole. (This switch position is usually labelled SAVE or ERASE OFF). When this cassette is loaded, the mark will flash in the viewfinder if you turn the program selector to a recording program.

If you want to record on the cassette again, slide the red switch back so the hole is open. (This position is usually labelled REC or ERASE ON.)

Notes:

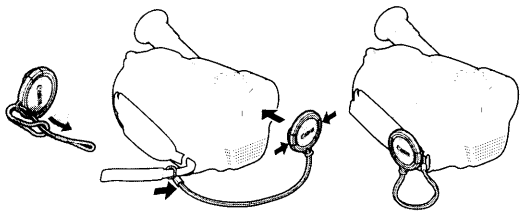
- Do not interfere with the compartment while it is opening or closing automatically.
- After loading a cassette, use record search (p. 30) to find the point where you want to start recording.
- Do not leave the cassette in the camera after use — return it to its case and store it in a cool, clean, dry place.
- The holes in the back of the cassette are used for transferring information — do not cover them.

Preparing the Camera

You should already have attached a power source to the camera and loaded a cassette. When you have completed the following steps, you will be ready to start recording.

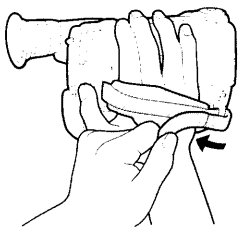
Prepare the lens cap

- Attach the cord to the eyelet on the lens cap, as shown.
- Pass the end of the grip belt through the loop on the other end of the cord.
- Hook the lens cap onto the grip belt while you are recording, and place it over the lens when you have finished.



Fasten the grip belt

- Release the Velcro fastening and hold the camera with your right hand while you adjust the belt with your left.



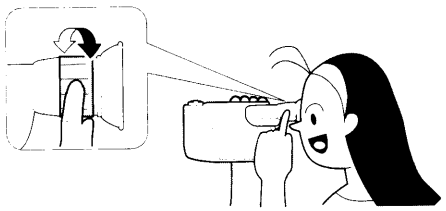
Adjust the viewfinder

- You need to adjust the viewfinder to suit your eyesight. First, put the camera in record pause mode. (Turn the program selector to a recording program and open the STANDBY cover.)

UC-X10Hi

- Adjust the viewfinder to suit your eyesight by turning the viewfinder focusing ring until the viewfinder displays are clearly focused.
- The viewfinder rotates through 90° to give a choice of shooting positions.

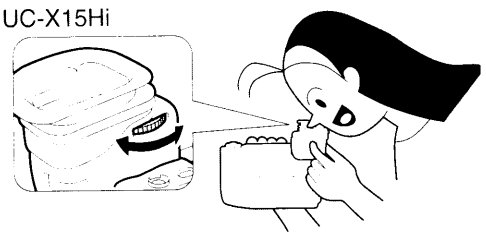
UC-X10Hi



UC-X15Hi

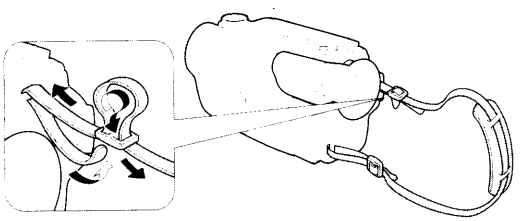
- Adjust the viewfinder to suit your eyesight by turning the viewfinder focusing wheel until the viewfinder displays are clearly focused.
- The viewfinder rotates through 90° to give a choice of shooting positions.

UC-X15Hi



Attach the shoulder strap

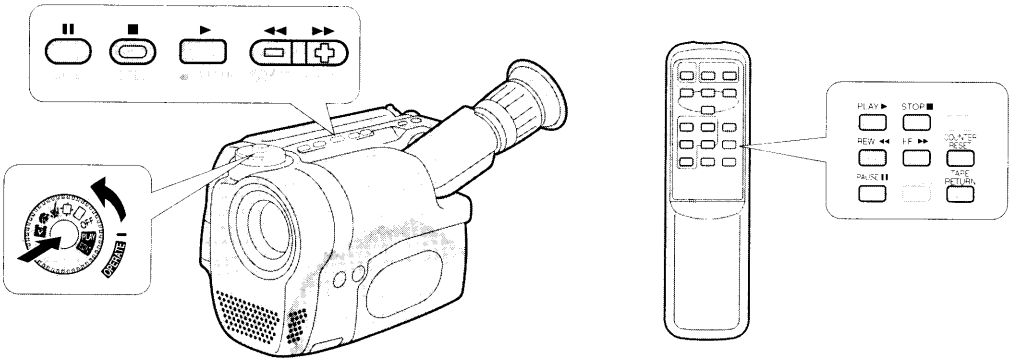
- For extra security and portability, attach the shoulder strap before using the camera.
- Pass the ends through the attachment bars and adjust the length as shown.



Note:

- Be careful not to leave the viewfinder exposed to bright sunlight, or it will melt. (The light is concentrated by the viewfinder lens.) You may be able to move the viewfinder out of direct sunlight by pushing it upright, or by moving it back down to horizontal.

Playback



You can use the viewfinder screen for instant, on-the-spot playback.

To play back your recordings on a TV, see p. 14.
To use the wireless controller, see p. 18.

1. **Attach a power source and turn the program selector to PLAY.**
   - The operation indicator lights up green.
2. **Load the cassette.**
3. **Press the ▶ button to start playback.**
   - To end playback, press the ■ button.
   - To wind the tape forwards, stop playback and press the ▶▶ button.
   - To wind the tape backwards, stop playback and press the ◀◀ button.
   - If the playback picture is rough, clean the video heads using a Canon CC-8 Video Head Cleaning Cassette or a commercially available dry-type head cleaning cassette.

Special playback

Still playback
Press the ❚❚ button. To resume normal playback, press it again, or press the ▶ button. The camera automatically goes into stop mode after about five minutes' still playback.

Fast forward playback
To play back the recording at about 9 times normal speed, press and hold the ▶▶ button during normal playback.

Rewind playback
For reverse playback at about 7 times normal speed, press and hold the ◀◀ button during normal playback.

High-speed search
To play back the recording at about 15 times normal speed, press and hold the ▶▶ button during normal fast forward. For reverse playback at about 15 times normal speed, press and hold the ◀◀ button during normal rewind.

Tape return
Use the wireless controller's TAPE RETURN button to quickly return to a scene you want to see again:

1. **Press the COUNTER RESET button during playback if you come across a scene you want to watch again later.**
   - The tape counter is reset to 0:00:00.
2. **When you have ended playback, press the TAPE RETURN button.**
   - The tape rewinds and stops when the counter nears 0:00:00.
   - You can cancel tape return by pressing the ■ button.
3. **Start playback.**

Notes:
- Noise bars appear on the screen during special playback and the soundtrack cannot be heard. On certain TVs the picture may roll and divide, or appear in black and white, and the high-speed search picture may not be visible.
- During still playback, the picture flickers, and fast action scenes may appear blurred.
- The tape counter is reset when a cassette is loaded.

Playback Connection

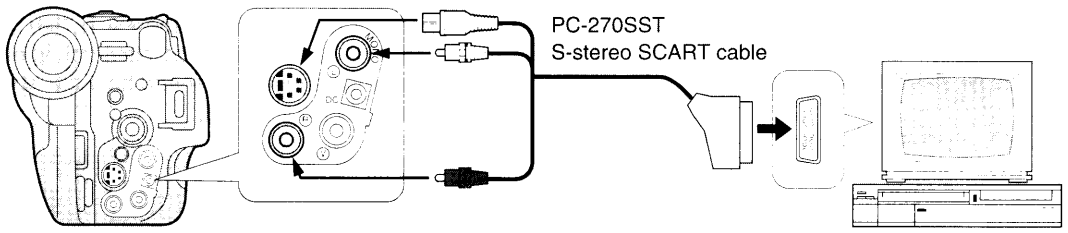
You can connect the camera to a TV or VCR in order to play back your recordings. You will need to attach a power source to the camera (see p. 7).

See your TV/VCR instruction manual for details.

Notes:

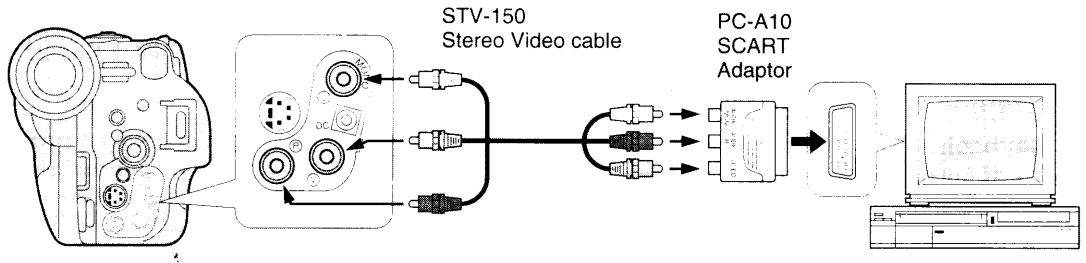
- If you are going to use the TV as a monitor while you are shooting, remember to keep the TV volume turned down as long as the camera's AUDIO terminals are connected. If the sound from the TV speakers is picked up by the microphone, an unpleasant high-pitched squeal, called feedback, may be produced.
- If you want a mono output, connect the cable to the camera's left AUDIO terminal Ⓛ, but do not connect the right AUDIO terminal Ⓡ. This will give a combined mono output from both left and right channels.
- The superior quality of Hi8 can best be appreciated on a TV which has S-video input.

If your TV (or VCR) has a SCART terminal (S-video)



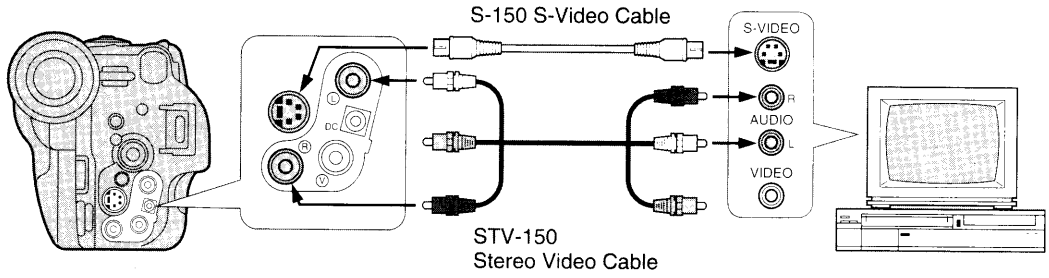
1. **Connect the camera to the TV (or VCR).**
   - Connect the camera using the optional PC-270SST S-stereo SCART Cable. Connect the white plug to the white audio terminal Ⓛ (left). Connect the red plug to the red audio terminal Ⓡ (right). Connect the S-video plug to the S-video terminal Ⓢ.
2. **Set the TV/VIDEO selector on the television to VIDEO.**
3. **If you are connecting the camera to a VCR, set the input selector on the VCR to LINE.**

If your TV (or VCR) has a SCART terminal (without S-video)



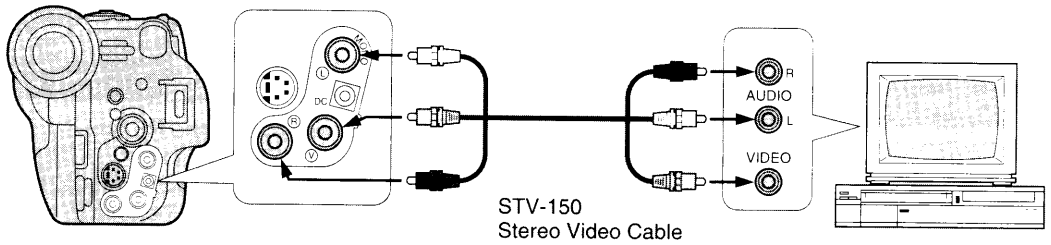
1. **Connect the PC-A10 SCART adapter to the TV or VCR's SCART terminal.**
2. **Connect the camera to the adapter.**
   - Connect the camera using the STV-150 Stereo Video Cable. Connect the white plug to the white audio terminal Ⓛ (left). Connect the red plug to the red audio terminal Ⓡ (right). Connect the yellow plug to the yellow video terminal Ⓥ.
3. **Set the TV/VIDEO selector on the television to VIDEO.**
4. **If you are connecting the camera to a VCR, set the input selector on the VCR to LINE.**

If your TV (or VCR) has an S-video input terminals



1. **Connect the camera to the TV (or VCR).**
   - Use the S-150 S-Video Cable to connect the S-video terminal Ⓢ.
   - Use a stereo cable or the STV-150 Stereo Video Cable, to connect the AUDIO terminals. Connect the white plug to the white AUDIO terminal Ⓛ (left). Connect the red plug to the red AUDIO terminal Ⓡ (right). Do not connect the yellow plug if you are using the STV-150 Stereo Video Cable.
2. **Set the TV/VIDEO selector on the television to VIDEO.**
3. **If you are connecting the camera to a VCR, set the input selector on the VCR to LINE.**

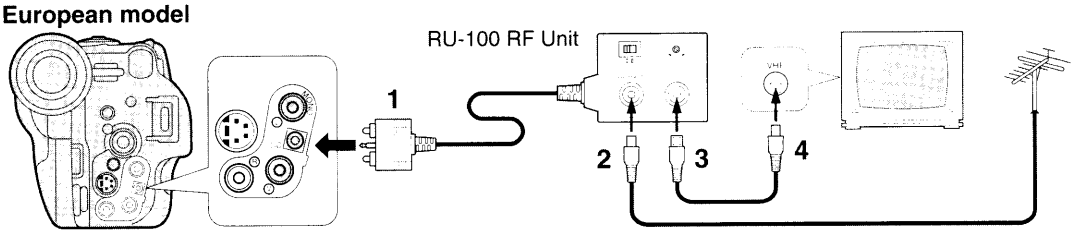
If your TV (or VCR) has audio/video input terminals



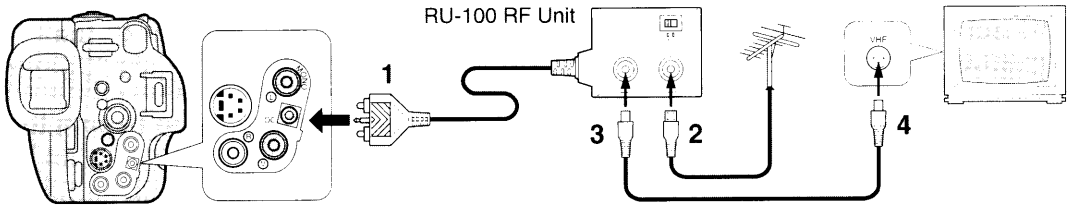
1. **Connect the camera to the TV (or VCR).**
   - Use the STV-150 Stereo Video Cable. Connect the white plug to the white AUDIO terminal Ⓛ (left). Connect the red plug to the red AUDIO terminal Ⓡ (right). Connect the yellow plug to the yellow VIDEO terminal Ⓥ.
2. **Set the TV/VIDEO selector on the television to VIDEO.**
3. **If you are connecting the camera to a VCR, set the input selector on the VCR to LINE.**

If your TV does not have audio/video input terminals

European model



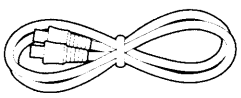
Australian model



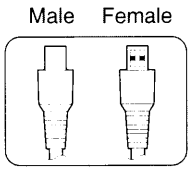
If your TV is already hooked up to a VCR, you can connect the camera to the VCR instead of the TV. Follow the instructions on p. 14 or 15.

To connect the camera directly to a TV which does not have audio/video terminals, you will need to use the optional RU-100 RF Unit. The soundtrack will be in mono. There are two different models, one for Australia, and one for Europe and other areas.

Connecting the RF unit



Coaxial cable with DIN-connectors

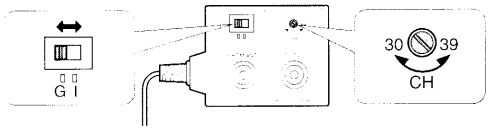


1. **Connect the RF unit to the camera.**
2. **Connect the aerial cable to the FROM ANT. terminal on the RF unit.**
3. **Connect the "female" DIN-connector on the coaxial cable to the TO TV terminal on the RF unit.**
4. **Connect the "male" connector to the aerial input on the TV.**
5. **Turn the TV on, and start playback on the camera.**
   - See p. 13 for playback.
6. **Set both the TV and the RF unit to the video channel.**

Selecting the video channel

The video channel is the channel which is not used by a broadcasting station in your area and can be used for cassette playback.

European model

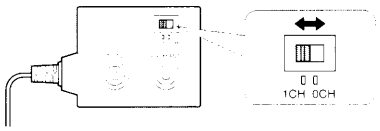


First set the G/I selector on the RF unit.
- In continental Europe, set it to G.
- In the UK, Hong Kong and South Africa, set it to I.

If it is not set properly, you will be able to see the picture, but not hear the sound.

Next, set the TV and the CH selector on the RF unit to the video channel. The selector is factory-set to channel 32. Adjust it by turning until the picture is clear.

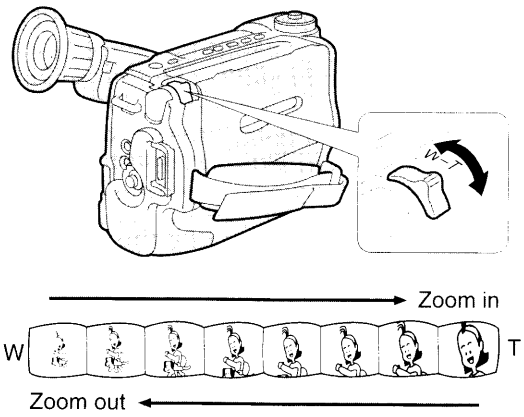
Australian model



Set the TV and the RF unit to channel 0 or 1.

Note:
- Turn the camera off or disconnect it from the RF unit when you want to watch a broadcast programme. If you leave the camera connected and turned on, the RF unit will automatically select the camera signal instead of the broadcast signal.

Zooming



The camera's 22X zoom lens allows you to choose the best picture angle for each scene:
- Turn the zoom control towards W to zoom out to wide-angle.
- Turn it towards T to zoom in to telephoto.

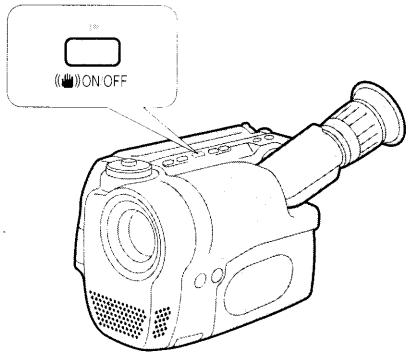
You can also control the speed of zooming:
- Move the control slightly to zoom slowly.
- Turn it further to zoom more quickly. (The further you turn the zoom control, the faster the zoom speed.)

The T and W buttons on the wireless controller adjust the picture angle, but not the zoom speed:
- Press W to zoom out to wide-angle.
- Press T to zoom in to telephoto.

Viewfinder displays

Zoom in	W ▷ T
Zoom out	W ◁ T
Stationary	W □ T

Optical Image Stabilizer

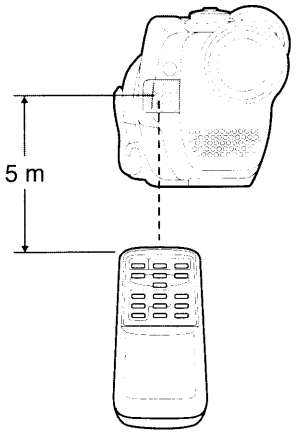


With most camcorders, even the slightest hand movements will be noticeable during telephoto recording. However, the UC-X10Hi/UC-X15Hi's Optical Image Stabilizer allows you to obtain steady recordings even at 22X magnification. Unlike electronic image stabilizers, it causes no loss of picture quality. The Optical Image Stabilizer can compensate for a wide range of camera movement — you can record stable images even if you are shooting from a moving car.

Before you start recording push the (✋) ON/OFF button to turn the image stabilizer on or off.
- The (✋) mark appears in the viewfinder when the stabilizer is on.
- The optical image stabilizer can also be turned on and off with the Custom Keys. See p. 20 for details.

Notes:
- Overuse of the zoom may make recordings seem too busy. It is generally better to use it sparingly, or in order to reframe between shots.
- When you want to get as close as possible to your subject, keep the zoom at the wide-angle position. You can focus on a subject as close as 1 cm (3/8 in).
- Keep the image stabilizer turned off when the camera is mounted on a tripod.
- The image stabilizer always remains on when you are using the Easy Recording program (see p. 24).
- The image stabilizer is designed to deal with a normal degree of camera shake — it cannot compensate for large movements of the camera.
- The image stabilizer is not as effective as usual when the optional wide-converter or tele-converter is attached.

Wireless Controller

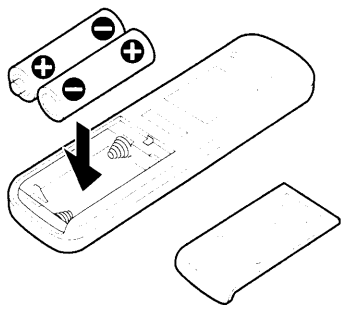


The wireless controller can operate the camera from a distance of up to 5 metres. Point it at the camera's remote sensor while you press the buttons.

The tally lamp lets you know that the camera is in range and responding to your commands.

There are two functions which can only be operated using the wireless controller:
- Tape return (p.13)
- On-screen viewfinder displays (p. 51)

Inserting batteries



Insert two AA batteries, following the ⊕ and ⊖ markings. Be careful not to reverse the polarity of the batteries.

Turning off the remote sensor

▶MENU (see p. 19)

▶SENSOR·····OFF

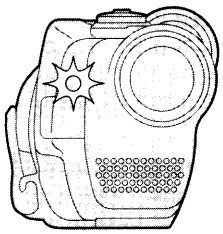
The remote sensor can be turned off to prevent interference from other Canon wireless controllers being used nearby.

1. **Open any menu, and point the arrow at SENSOR.**
2. **Select the OFF setting and close the menu.**
   - S OFF appears in the viewfinder.

Turning off the tally lamp

▶MENU (see p. 19)

▶TALLY·····OFF



The tally lamp lets you know that the camera is recording. However, its flashing may be reflected into the lens during close-up recording, or when recording through glass.

1. **Open the camera menu and point the arrow at TALLY.**
2. **Select the OFF setting and close the menu.**
   - The tally lamp no longer flashes during recording, but it will still light up when the camera receives a signal from the wireless controller.
   - T OFF appears in the viewfinder.

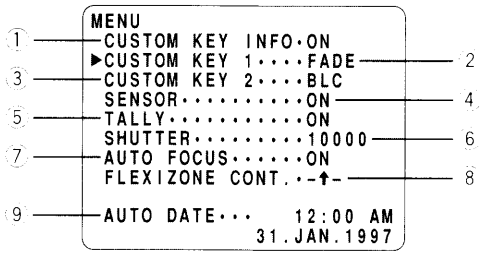
Notes:
- When both the tally lamp and the remote sensor are off, T/S OFF appears in the viewfinder.
- Sunlight or fluorescent light falling on the sensor may shorten the controller's operating distance by interfering with its infrared signals.
- The camera may have difficulty picking up the remote control signals at extremely close range.
- Do not leave the controller exposed to direct sunlight, or in hot or humid places.
- When changing exhausted batteries, replace them all at once.
- The remote sensor and the tally lamp can also be turned on and off with the Custom Keys. See p. 20 for details.

Using the menus

The camera's menus activate a wide range of advanced functions. There are three separate menus, for recording (the "Camera" menu), playback and editing.

Camera Menu

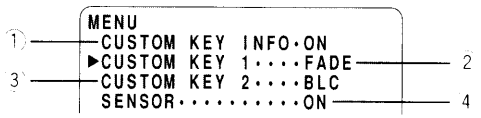
While the camera is in record pause mode, press the menu button on the back of the camcorder.



1	Custom Key information	p. 20
2	Custom Key function 1	p. 20
3	Custom Key function 2	p. 20
4	Remote sensor	p. 18
5	Tally lamp	p. 18
6	Shutter speed	p. 29
7	Auto focus	p. 26, 27
8	FlexiZone control angle	p. 26
9	Date display style	p. 21

Playback Menu

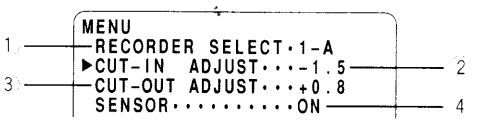
While the program selector is set to PLAY, press the menu button on the back of the camcorder.



1	Custom Key information	p. 20
2	Custom Key function 1	p. 20
3	Custom Key function 2	p. 20
4	Remote sensor	p. 18

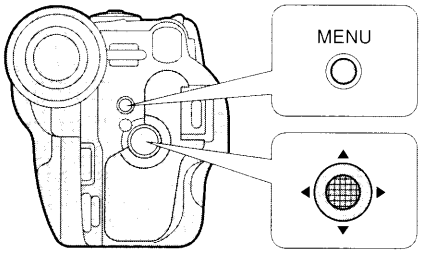
Editing menu

While the program selector is set to EDIT, press the menu button on the back of the camcorder.



1	Recorder Select	p. 34
2	Cut-In time adjustment	p. 37
3	Cut-Out time adjustment	p. 37
4	Remote sensor	p. 18

Turn to the appropriate page for a detailed explanation of each function.



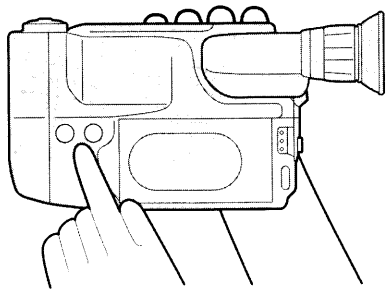
1. **Press the MENU button to open the menu.**
2. **Press the FlexiZone controller up or down to move the arrow up or down the display.**
3. **Press the FlexiZone controller sideways to turn the function on or off, or to change its setting.**
4. **Press the MENU button again to close the menu.**

Note:

- You can display the menus on a connected TV screen using the wireless controller's ON-SCREEN button. (see p. 51)

Custom Keys

The UC-X10Hi/UC-X15Hi's Custom Keys let you, the user, choose the functions you want at your fingertips.



The two keys on the left-hand side of the camera body can be easily set to operate any of a wide range of functions. When you buy the camcorder, they should normally be set to FADE - (CUSTOM KEY 1) (see p. 23) and BLC - (CUSTOM KEY 2) (see p. 28).

Choose the functions you are likely to use most often and set the keys to operate those. It is easy to change the function of a custom key if necessary.

To set the function of the Custom Keys

▶ **MENU**
(see p. 19)

```
▶CUSTOM KEY 1····FADE
 CUSTOM KEY 2····BLC
```

1. **Set the program selector to a recording program or PLAY.**
   - The function of a Custom Key in playback mode (i.e.: When the program selector is set to PLAY) is independent of its function in camera mode (i.e.: when the program selector is set to a recording program).
2. **Open the camera or playback menu and point the arrow at "CUSTOM KEY 1" or "CUSTOM KEY 2."**
   - The keys are numbered on the side of the camera.
3. **Select the setting you want for that key, and close the menu.**
   - While the menu is open and the arrow pointed to a Custom Key, the Custom Key can also be set to one of the functions marked at the top of the next column with an asterisk, by pressing the key on the camera body or the wireless controller which ordinarily activates that function.

You can choose from the following functions:

FADE	p. 23
BLC	p. 28
MANUAL FOCUS	p. 27
SHUTTER	p. 29 (Manual shutter)
EXP. LOCK	p. 28 (FlexiZone AE)
I. S. OFF*	p. 17 (Image stabilizer)
SENSOR	p. 18 (Remote sensor)
TALLY LAMP	p. 18
ON-SCREEN*	p. 51
TITLE*	p. 22
DATE*	p. 21
TAPE RETURN*	p. 13
COUNTER RESET*	p. 13
REC. SEARCH +*	p. 30
REC. SEARCH –*	p. 30
START/STOP*	p. 6
(blank)	(No function set)

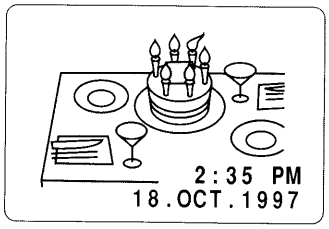
Displaying the Custom Key function in the viewfinder

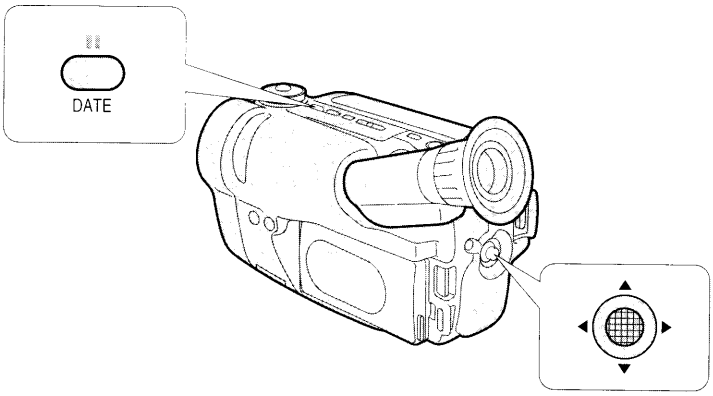
If you wish you can display in the viewfinder which function each Custom Key currently operates. To turn this display on or off:

1. **Set the program selector to a recording program or PLAY.**
2. **Press the menu button on the back of the camera.**
   - A menu appears in the viewfinder.
3. **Make sure the cursor is pointing to CUSTOM KEY INFO at the top of the display.**
   - Move it up or down with the FlexiZone controller if necessary.
4. **Switch the display ON or OFF by pushing the FlexiZone controller sideways.**
   - When finished, press the menu button again.

Note:
- The camera will remember each Custom Key's function until a new function is set.

Date and Time





The date and/or time display appears in the viewfinder when you press the DATE button. If you start recording now, it will be superimposed on the scene. Press the button again to cancel the display.

If you have not set the date and time, —:—:— appears in the viewfinder when you press the DATE button. This will not be recorded.

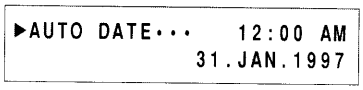
Setting the date and time

Set the date and time display when you first start using your camera. As long as you have installed the backup battery (p. 10), the camera's internal clock will continue to work even when the main power source is removed.

1. **Turn the program selector to a recording program and open the STANDBY cover.**
2. **Press and hold the DATE button for three seconds.**
   - The year display in the viewfinder starts flashing.
3. **Press the FlexiZone controller up or down to scan the year display.**
   - Press once to scan a year at a time. Press and hold to scan quickly.
4. **When you have chosen the year, press the FlexiZone controller sideways.**
   - The year is set, and the next part of the display starts flashing.
5. **Repeat steps 3 and 4 to set the months, days, hours and minutes.**
6. **Press the DATE button to start the clock.**

Choosing the display style

MENU
(see p. 19)



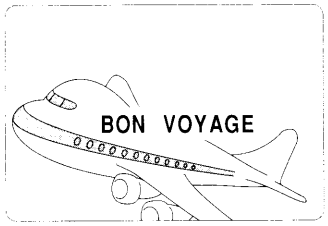
You can choose from three different date/time displays:

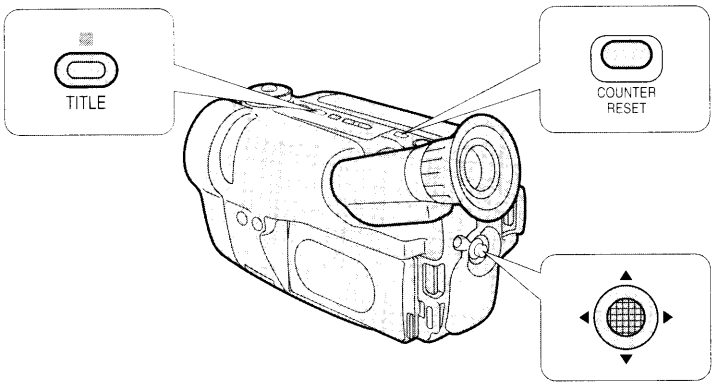
2:35:10 PM	Time
18.OCT.1997	Date
2:35 PM 18.OCT.1997	Date and time

1. **Put the camera in record pause mode.**
2. **Open the camera menu and point the arrow at AUTO DATE.**
3. **Select the style you want, and close the menu.**

Note:
- The display can be set to any year between 1996 and 2010.

Titles



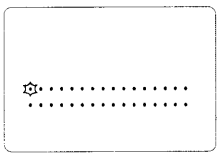


You can write your own titles and store them in the camera's memory in order to add them to your recordings. Remember to install the backup battery first (see p. 10).

The title stored in the memory is displayed in the viewfinder when you press the TITLE button. If you start recording now, it will be superimposed on the scene.

Press the button again to cancel the display. If it does not appear in the viewfinder, it will not be recorded.

Writing a title



These lines appear in the viewfinder while you are writing a title.

Enter your title in the camera's memory before you start recording. The title can be one or two lines of up to 16 characters each.

1. **Turn the program selector to a recording program and open the STANDBY cover.**

2. **Press and hold the TITLE button until the title lines appear in the viewfinder.**
   - If you have already entered a title in the memory, it will be displayed in the viewfinder.
   - The first dot (or character) flashes to show where the cursor (the insertion point) is located.

3. **Press the FlexiZone controller sideways to move the cursor to the point where you want to start the title.**
   - Press once to move the cursor one space at a time. Press and hold to move it quickly.

4. **Press the FlexiZone controller up or down to scan the list of title characters.**
   - Press once to scan one at a time. Press and hold to scan quickly.
   - You can choose from the following characters:

     →ABCDEFGHIJKLMNOPQRSTUVWXYZ←
     ↳ ☼ &✱!?:;'"-/.,9876543210☼ËÇÑÆÅØÜÖÄ←

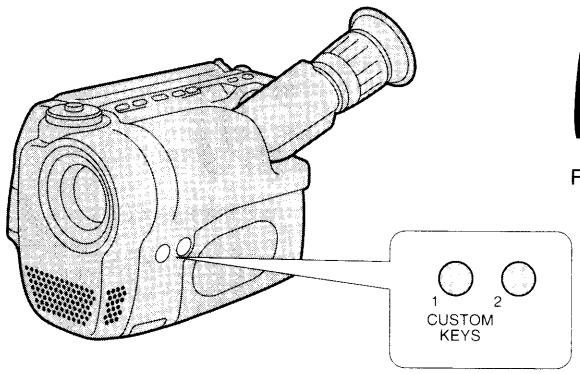
   - If you choose the flashing dot ☼, nothing will be recorded at this position.
   - You can erase all the characters at and to the right of the cursor by pressing and holding the COUNTER RESET button for more than one second for more then one second.

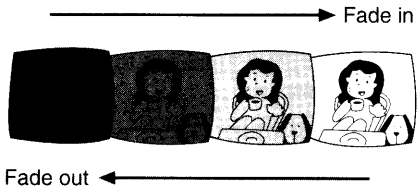
5. **When the character you want is displayed, press the FlexiZone controller sideways to move the cursor to the point where you want to write the next character.**

6. **Repeat steps 4 and 5 until your title is complete, then press the TITLE button to enter the title in the memory.**

Note:
- If it takes you more than about five minutes to write a title, the camera may turn itself off automatically before you finish. This can be avoided by removing the cassette before you begin.

Fade





Fade in

To make the scene gradually appear from a blank screen:

1. **Make sure one of the Custom Keys is set to FADE.**
   - See p. 20 for details.
2. **Put the camera in record pause mode.**
3. **Press and hold the "FADE" Custom Key until the scene disappears completely from the viewfinder.**
4. **Press the start/stop button to begin recording.**
5. **Release the "FADE" Custom Key.**
   - The scene gradually reappears in the viewfinder.

Fade out

To make the scene gradually disappear:

1. **Make sure one of the Custom Keys is set to FADE.**
   - See p. 20 for details.
2. **Press and hold the "FADE" Custom Key during recording.**
3. **When the scene has completely disappeared, press the start/stop button to end recording.**
4. **Release the "FADE" Custom Key.**

Notes:

- The sound fades together with the image.
- Title and date and time displays do not fade.

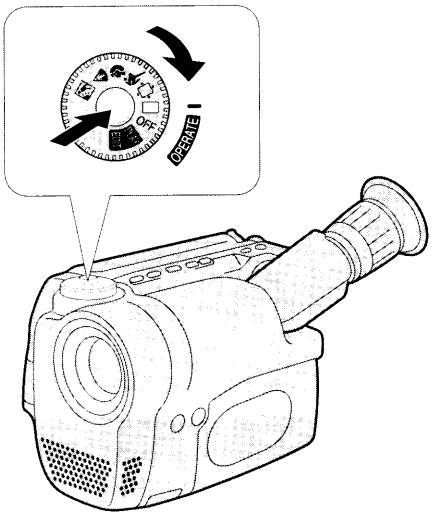
Choosing a Recording Program

The camera provides you with a choice of six recording programs. They use different combinations of camera settings in order to adjust the exposure and other functions to match the recording situation.

Rotate the program selector to choose the appropriate program before you start recording.

- For simple point-and-shoot operation, select the Easy Recording program. Turn the selector dial to the □ position.
- For normal shooting conditions, use the FlexiZone Recording program. Set the selector dial to ⌖.
- For difficult recording conditions, the camera has four more specialised AE (auto exposure) programs.

Press and hold the lock button when you move the selector from the OFF position.



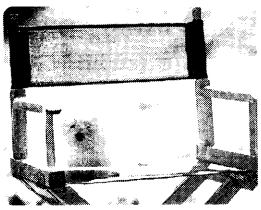
Easy Recording

The simplest way to use the camera is with the program selector set to the □ position. The camera will adjust the focus and exposure automatically, leaving you free to point and shoot.

FlexiZone Recording

In normal recording conditions, set the program selector to the ⌖ position. This is the same as the Easy Recording program, except that you now have the option of using any of the camera's manual functions.

- Choose this program if you want to use FlexiZone AF (p. 26), FlexiZone AE (p. 28), focus lock (p. 27) or manual shutter (p. 29).



Specialised AE programs

Sports

This program is useful for recording high-speed sports scenes in brightly lit conditions. Normal playback will be slightly jerky, but you will get clear images which can be analysed frame by frame during slow or still playback on a VCR.

- Manual focus can be used in this mode (p. 27).

Portrait

Use this program outdoors to make the subject stand out from a softened foreground and background. It works well for still-lifes and close-ups. The effect is most noticeable when the zoom position is between the middle range and the telephoto end. Focus manually for maximum accuracy.

- Manual focus can be used in this mode (p. 27).

Spotlight

This program is designed for recording spotlit scenes, such as on a stage. The exposure is automatically adjusted for glare-free recordings of subjects lit by a concentrated light source.

- Manual focus can be used in this mode (p. 27).

Sand & Snow

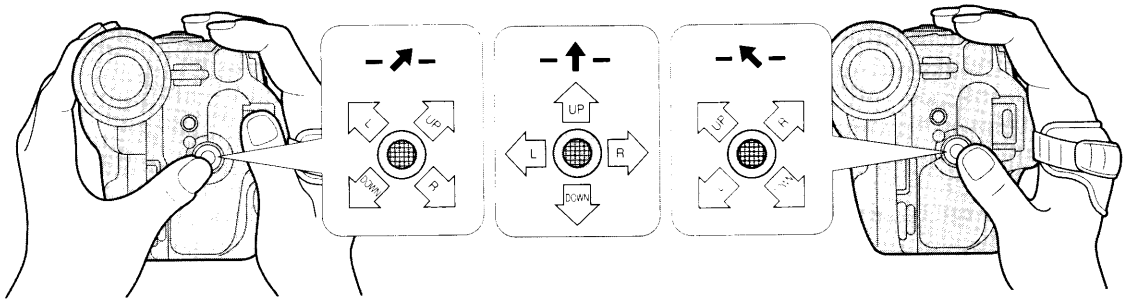
Use this program in places where the background is so bright that the subject appears underexposed in the viewfinder — a sunny beach or ski resort, for example.

- Manual focus can be used in this mode (p. 27).

Notes:

- Avoid changing programs during recording as the brightness of the image may change suddenly.
- The specialised AE programs are not suitable for all kinds of lighting. The image may flicker, or a bright line may appear on the screen if you use them in the wrong lighting conditions.

Setting the FlexiZone



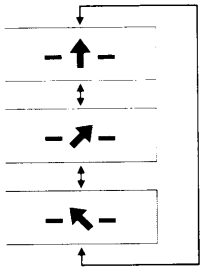
Setting the FlexiZone to suit your hand

The FlexiZone controller can be used equally well with the right or left hand.
Normally, pressing on the upper part of the FlexiZone controller moves the frame directly upward, pressing on the lower part moves it directly downwards, and so on. However, the directions the controller indicates can be shifted so that it works naturally with the thumb.

MENU
(see p. 19)

▶FLEXIZONE CONT.·-↑-

1. **Turn the program selector to a recording program and open the STANDBY cover.**
2. **Open the camera menu and point the arrow at FLEXIZONE CONT.**
3. **Select the setting you want, and close the menu.**
   - The arrow in the viewfinder indicates the angle of the "up" direction.



Note:
- The camera remembers this setting until you set it again.

Focusing

The camera can focus automatically. All you have to do is point it, and whatever is in the centre of the viewfinder will usually be in sharp focus.

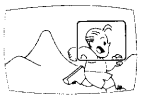
It also has two functions which give you more control over focusing.

FlexiZone AF

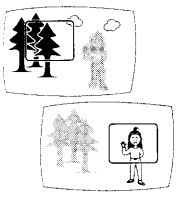
FlexiZone AF makes autofocus much more powerful. Using the FlexiZone controller, you can select any object that appears in the viewfinder, and the camera will bring it into focus. Choose the FlexiZone Recording program when you want to use FlexiZone AF.

FlexiZone AF is useful in the following situations:

When your main subject is not in the centre of the viewfinder



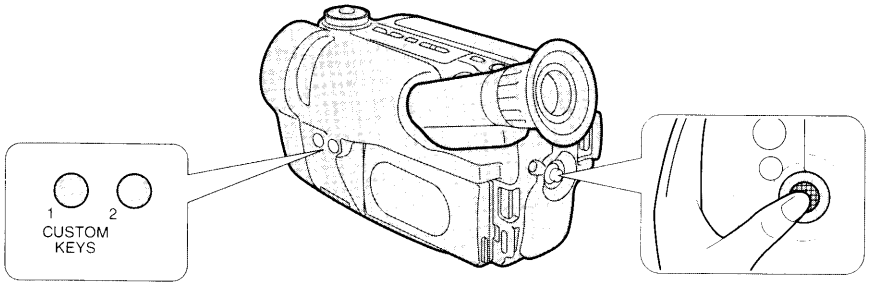
When you want to shoot a moving subject



It also makes it easy to use "focus shift" techniques. You can direct the viewer's attention by focusing first on one part of the scene, and then on another.

1. **Turn the program selector to ⌖.**
   - The FlexiZone Control frame appears in the viewfinder.
2. **Use the FlexiZone controller to move the frame over the subject.**
   - The controller can be moved in any direction. Press it repeatedly to move the frame little by little. Press and hold to move the frame quickly.
   - The camera adjusts the focus to suit the area inside the frame.

Focusing



Focus Lock and Manual Focus

You can use focus lock with every recording program except for Easy Recording. It is especially useful when people or cars cross in front of the camera or the subject is not in the centre of the viewfinder.

1. **Make sure that one of the Custom Keys is set to M. FOCUS.**

2. **Point the camera directly at the subject.**
   - The subject automatically comes into focus.
   - If you are using FlexiZone AF, put the frame over the subject.

3. **Press the "M. FOCUS" Custom Key.**
   - The focus remains locked at this point.
   - AF OFF appears in the viewfinder.

4. **Press the "M. FOCUS" Custom Key to return to autofocus.**

In the special recording programs, (Sports, Portrait, Spotlight, and Sand & Snow), you can adjust the focus manually while it is locked.

1. **Use the zoom to frame your subject.**
   - If you use the zoom after focusing, the picture may go out of focus.

2. **Press the "M. FOCUS" Custom Key to switch from auto to manual focus.**
   - AF OFF appears in the viewfinder.
   - The focus remains locked at the point set by the autofocus.

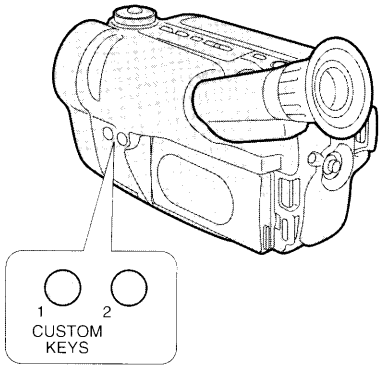
3. **Use the FlexiZone controller to set the focus.**
   - Press it downwards to move the focus nearer.
   - Press it upwards to move the focus further away.

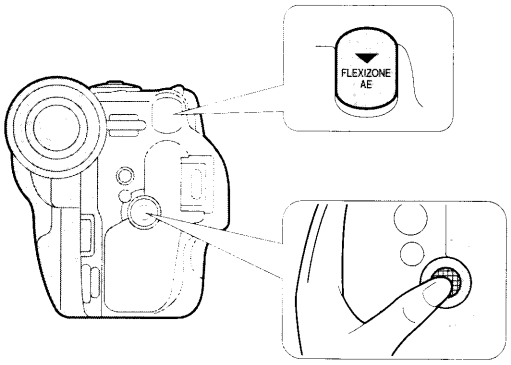
4. **Press the "M. FOCUS" Custom Key again to return to autofocus.**

Notes:

- See "Troubleshooting" on p. 49 for a list of subjects which may not be suitable for autofocus.
- Manual focus is cancelled if you choose the Easy Recording program, or if you turn the program selector to EDIT, PLAY, or OFF.
- FlexiZone AF is cancelled if you move the program selector from the ·⌖· position.
- If you turn the program selector to ·⌖· position while using manual focus, the focus remains locked. You may release it and activate the FlexiZone AF by pressing the "M. FOCUS" Custom Key.

Exposure Control

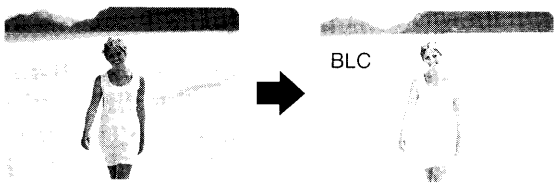




The camera adjusts the exposure automatically, making sure that your pictures are neither too dark nor too light. There is a choice of six recording programs to deal with different recording conditions (see p. 24).

This section explains how to use two more exposure functions. These will give you added control over your recordings.

Backlight compensation



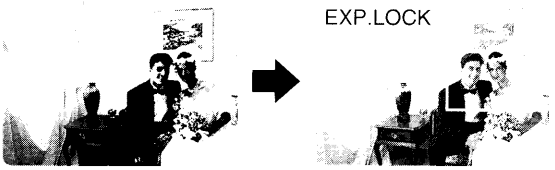
If the subject is brightly lit from behind, it may appear under-exposed and lacking in detail. To compensate for this, use the BLC function.

1. **Make sure one of the Custom Keys is set to BLC. (see p. 20).**

2. **If your subject is backlight and under-exposed press and hold the "BLC" Custom Key.**
   - The camera will compensate for this as long as you hold the key down.

3. **Release the key when it is no longer needed.**
   - You can only use backlight compensation when you have selected the Easy Recording or FlexiZone Recording program.

FlexiZone AE



The camera usually adjusts the exposure so that it is suitable for the whole scene, and especially for the area in the centre of the viewfinder. FlexiZone AE allows you to choose any part of the scene, so that even if your subject is towards the edge of the screen, or if it is very bright or very dark, it will still be properly exposed.

1. **Turn the program selector to ⌖.**
   - The FlexiZone control frame appears in the viewfinder.

2. **Use the FlexiZone controller to move the frame over the subject.**
   - The controller can be moved in any direction.

3. **Press the FLEXIZONE AE button.**
   - The camera adjusts the exposure to suit the area that is currently inside the frame. You can move the frame to focus on something else, but the exposure area will not move with it.
   - EXP.LOCK appears in the viewfinder.

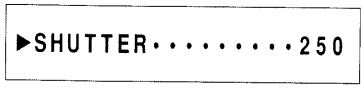
4. **Press the button again when you want to cancel FLEXIZONE AE.**
   - The exposure is now adjusted to suit the centre of the screen again.
   - Press the button once more if you want to adjust the exposure for the frame's new position.

Notes:
- FlexiZone AE can also be operated with the Custom Keys (See p. 20 for details.).
- You can set the correct exposure for the subject with the FlexiZone AE, and then input a beautifully developed picture using the Film Adapter.

Manual shutter

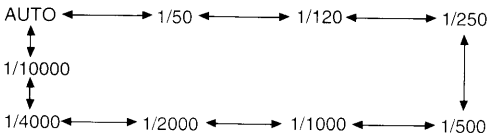
The shutter speed is usually controlled automatically, but you can also set it manually, as long as the program selector is at the ⌖ position.

MENU
(see p. 19)



1. **Open the camera menu and point the arrow at SHUTTER.**

2. **Select the shutter speed you want.**

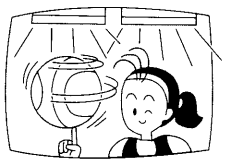


3. **Close the menu.**
   - The selected shutter speed is displayed in the viewfinder.
     There is no display when the shutter is set to AUTO.

Which shutter speed?

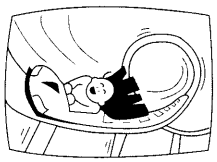
Select the shutter speed which suits the speed and brightness of the subject:

1/120 second



To reduce the exposure level when shooting very bright scenes, or to give more stable pictures when shooting indoor sports.

1/250 to 1/1000 second



To record outdoor action on a cloudy day.

1/2000 to 1/10000 second

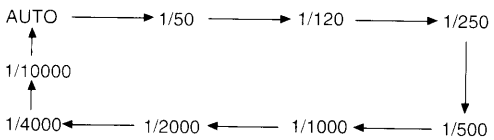
To record outdoor sports on a clear day so that you can freeze the action clearly. Normal playback will be slightly jumpy, but on a VCR with a noise-free still playback function, you will get clear images which can be analysed frame by frame.

Custom Keys

You can also select a manual shutter speed with the Custom Keys.

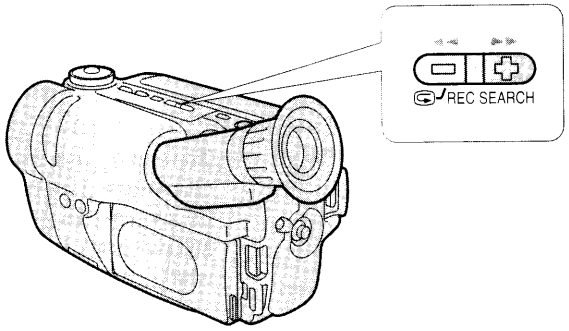
1. **Make sure a Custom Key is set to SHUTTER. (See p. 20 for details)**

2. **Press the "SHUTTER" Custom Key to change the shutter speed.**
   - The shutter speed is displayed in the viewfinder.
   - There is no display when the shutter speed is set to AUTO.
   - Each time you press the key, the speed increases as follows:



Notes:
- The higher the shutter speed, the more light you will need.
- Make sure the sun does not appear in the viewfinder when the shutter speed is set to 1/1000 sec or faster.
- The shutter setting is cancelled if you move the program selector from the ⌖ position.
- The shutter setting is preserved if you turn the power off with the STANDBY cover, but not if you turn the power off with the program selector.

Record Search



Record search

When the camera is in record pause mode, you can use record search to play the tape forwards or backwards to find the point where you want to start or restart recording. This is useful when you want to add a new scene to a previously used cassette. By using record search, you can ensure a smooth, noise-free join between the new scene and the old one.

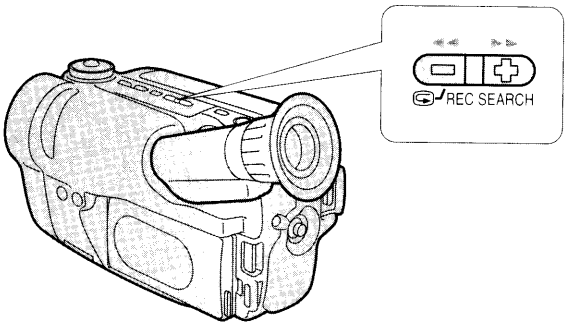
1. **Make sure the camera is in record pause mode.**

2. **Press and hold the REC SEARCH + or – button while you check the picture in the viewfinder.**
   - The + button plays the recording forwards and the – button plays it backwards.

3. **Release the button when you find the point where you want to start recording.**
   - The record search picture pauses briefly and then the camera returns to record pause mode.

Notes:
- Noise or skew (picture distortion) may appear on the screen during record search.
- Record search function can also be operated with the Custom Keys. (See p. 20 for details.)

Record Review



Record review

When the camera is in record pause mode, you can use record review to play back the last few seconds of your recording and then return automatically to record pause mode. You can quickly make sure that a scene has recorded properly and then go on to shoot the next scene, without producing any noise in the picture.

1. **Make sure the camera is in record pause mode.**

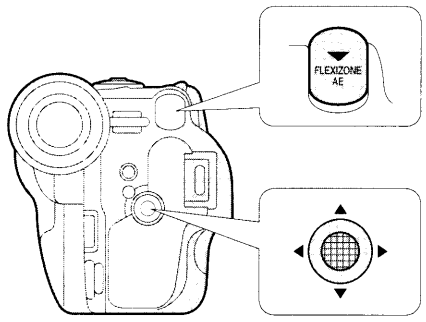
2. **Press and release the ⟲ button (the REC SEARCH – button) while you check the picture in the viewfinder.**
   - The camera rewinds the tape and plays back the last few seconds.
   - The camera returns to record pause mode at the point where you pressed the button.

Notes:

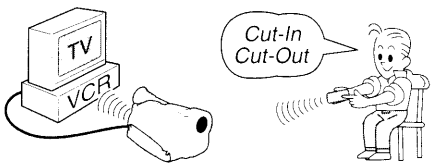
- Noise or skew (picture distortion) may appear on the screen during record review.
- Record review function can also be operated with the Custom Keys. (See p. 20 for details.)

The Auto Editing Function

Using the Auto Editing Function is simple. Just watch your original tape and press the FLEXIZONE AE button (or the EXECUTE button on the wireless controller) at the beginning and the end of each scene you want to record.
This creates an editing program. Start the program, and the camcorder automatically records the scenes you selected onto the tape in your VCR. Before you record, you can preview everything (p. 36), change the point a scene begins or ends (p. 38), and even delete (p. 39) or re-order scenes (p. 40).

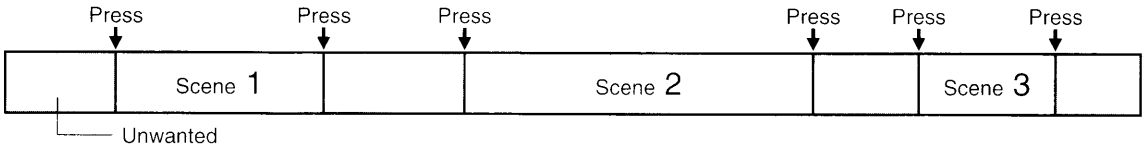


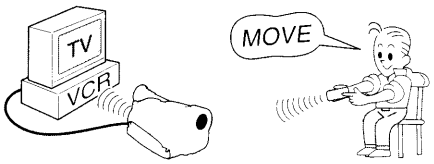
1. **Prepare the camera. Connect the video cables, and place it so that it can control your VCR by remote control. (See p. 33 for details)**



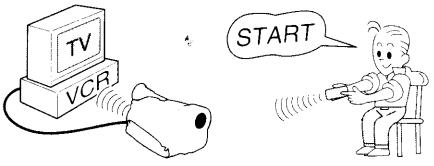
2. **Watch the video. When a part you want to keep starts, press the EXECUTE button on the wireless controller. (Or the FLEXIZONE AE button on the camera body.) Press the button again at the end of the part you want to keep. You can choose up to eight scenes this way. (See p. 35 for details)**

Original tape in Camera





3. **If you wish, preview the video. You can also re-order scenes, change the time they start and finish, or even delete them.**
   - To select a function, a scene, or a time, or to move a scene, use the FlexiZone Controller. To activate a function use the EXECUTE button (or the FLEXIZONE AE button.) (See pp. 36–40 for details)

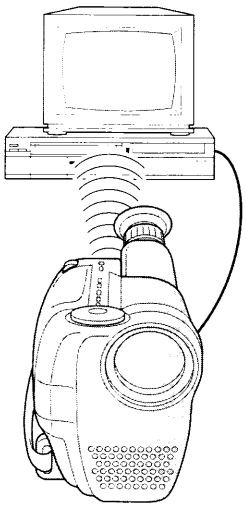


4. **When everything is perfect, automatically record it to the VCR. Choose START in the menu, then press the EXECUTE button (or the FLEXIZONE AE button.) (See p. 36 for details)**

Final tape in VCR

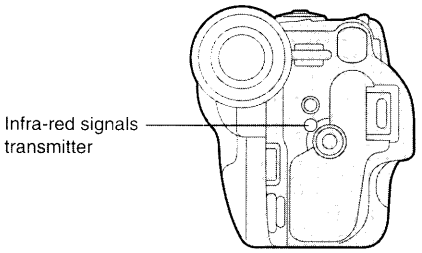
2	3	1	Blank

Note:
- The quality of the edited tape will be slightly lower than that of the original.



The UC-X10Hi/UC-X15Hi's auto editing function enables you to smoothly rerecord scenes from an original tape in any order. You can then view the entire finished product and make all the fine adjustments you want before the final recording. It is easy to reorder or re-adjust scenes.
• See your VCR instruction manual.

1. **Connect the camera to the VCR.**
   • See the "Playback Connection" instructions on page 14.
2. **Turn the TV on.**
   • Be sure to set it to the video channel, or set the TV/Video selector to Video.
3. **Turn on the VCR and load a blank cassette.**
4. **Set the VCR to line-input and put the VCR in record-pause mode.**
5. **Turn the camera's program selector to EDIT.**
   • When you set the program selector to EDIT, all viewfinder displays are also displayed on the screen of the TV attached to your VCR. However, these displays will not be recorded onto the tape in the VCR.



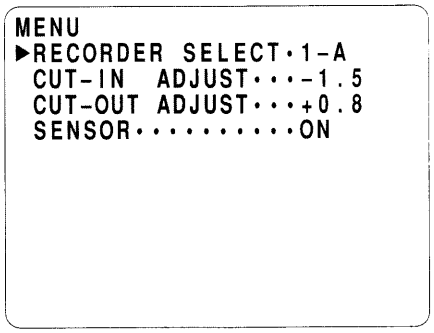
Setting the Camera to Control your VCR

The camcorder's auto editing function controls your VCR by using the same infra-red signals as the VCR's remote control.

Make sure the camera is in a spot where it can remotely control your VCR.

1. **Check where the remote control sensor is on your VCR using its normal remote control.**
2. **Place the camera pointing directly at the sensor, not more 50 cm (20 inches) away.**
   • Check that the sensor will pick up signals easily from this spot using the VCR's normal remote control.
   • Make sure that the cables and the camera strap do not obstruct the signals.
3. **Make sure that the VCR is in record-pause mode.**
   • In other words: it is ready to record, with a blank tape loaded and record and pause on.

Using the Auto Editing Function the first time



When you use the editing function for the first time, or with a different VCR, you should set your camcorder to send the correct remote control signals to your VCR.
The camera will not forget the RECORDER SELECT setting unless you change it. Do not alter it unless you change VCR.

1. **Make sure that the camera and VCR are set up as in "Preparations," and "Setting up your camera to control your VCR," p. 33.**

2. **Open the menu and point the arrow to RECORDER SELECT.**

3. **Choose the correct setting for your VCR using the chart on the right.**
   - Hold down the FlexiZone controller to the right to change the numbers and letters, until you come to the first setting for your brand of VCR. (For example, 7-A if you have a JVC VCR.)
   - Check if this is the right setting:
     First, press the FLEXIZONE AE button.
     If the VCR starts to record, this is the correct setting.
     If the VCR does not start to record, try the next setting (7-B in the above example.)
     Try all the settings for your VCR brand in turn.

4. **If you cannot find the correct setting as above, use the following method.**
   - Hold the FlexiZone controller down to the right.
   - The letters and numbers in the viewfinder or on the TV screen will change. The camera searches all possible settings.
   - Release this when the VCR starts to record. It should not take more than 80 seconds to find the correct setting.
   - Check if this is the right setting:
     First, put the VCR into record pause mode. (Ready to record, pause on.)
     Then press the FLEXIZONE AE button. The VCR should start recording again.
     If not, try the setting immediately before.

5. **As a final test, try the using the Auto Editing Function. If the VCR does not start and stop correctly, try another setting.**
   - The number (i.e. the manufacturer) is probably right, but try some of the other letters.

RECORDER SELECT

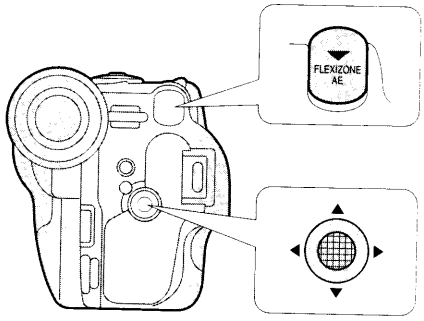
The camera's Auto Editing Function can remotely control almost all brands and models of VCR. VCR remote control signals vary depending on model and brand, so first choose the right setting with RECORDER SELECT in the EDIT menu. Beside RECORDER SELECT, there is a number and a letter. The number indicates the VCR brand. The letter indicates the set of signals.

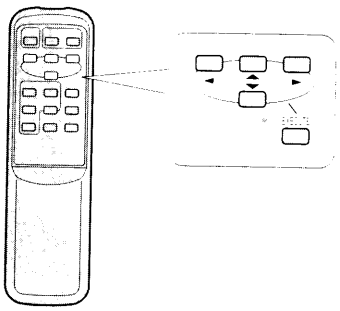
Brand	Settings	Brand	Settings
Canon	1-A to 1-B	Toshiba	15-A to 15-B
Aiwa	2-A to 2-C	GE, RCA	16-A to 16-B
Akai	3-A to 3-C	Magnavox	17-A to 17-B
Fujitsu	4	Philips, Seleco, Rex, Thomson, Saba, Nordmende	18-A to 18-D
Funai	5		
Hitachi	6-A to 6-B		
JVC	7-A to 7-C		
Mitsubishi	8-A to 8-D		
NEC	9-A to 9-D		
Panasonic, Blaupunkt, Quasar	10-A to10-F	Ferguson	19-A to 19-C
		Grundig	20-A to 20-D
Pioneer	11	Nokia	21-A to 21-C
Sanyo, Fisher	12-A to12-D	Telefunken	22-A to 22-B
		Zenith	23
Sharp	13-A to 13-C	Samsung	24-A to 24-B
Sony	14-A to 14-C	Gold Star	25

as of April 1997

Notes:
- While using RECORDER SELECT, the FLEXIZONE AE button will make your VCR start recording if it is in record pause mode.
- If you are not sure of the right setting, follow the instructions on the left.

Notes:
If you try all the numbers and letters, but the VCR has still not started to record:
- Check the VCR is ready to record, and on pause.
- Check the VCR can receive signals from where the camera is, and that nothing is blocking the signals.
- Go back and try to set it again. As always with remote control infra-red signals, it may not be received correctly first time.
- It is unlikely, but you may have a VCR the Auto Editing Function cannot control. If so use the Simple Editing method on p. 41.





Choosing a scene (SET function)

You can put a scene into the editing program by pressing the FLEXIZONE AE button at the point where you want the scene to start and at the point where you want it to end. (The "cut-in" and the "cut-out" points.)
Instead of using the controls on the camcorder body, you can use the wireless controller. The EXECUTE button on the wireless controller corresponds to the FLEXIZONE AE button on the camcorder. The four arrows on the wireless controller correspond to the FlexiZone controller.

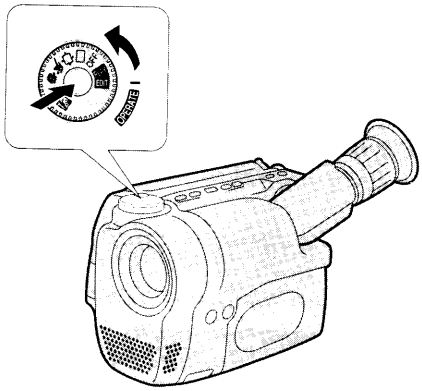
1. **Make sure the program selector is set to EDIT.**

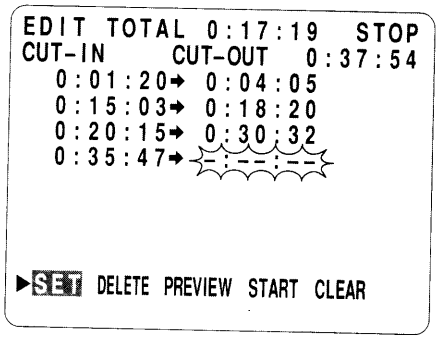
2. **Make sure that the SET function at the bottom of the screen is highlighted.**
   - If it is not, move the arrow down the screen with the FlexiZone controller to the bottom line. Then press the Flexizone controller sideways to change the highlighted function.

3. **Start the tape with the "Play" button: ▶.**
   - Rewind the tape first, and press COUNTER RESET.
   - You can use the ▶, ◀◀, ▶▶, ❚❚, and ■ buttons in the same way as in playback mode.

4. **At the start of a scene you want to record, press the FLEXIZONE AE button.**

5. **Press it again at the end of the scene.**
   - The beginning and end of the scene according to the counter (the "cut-in" and "cut-out" points) are displayed on the screen.
   - The camera will not let you put in a "cut-in" point later than its "cut-out" point, nor a "cut-out" point earlier than its "cut-in" point.

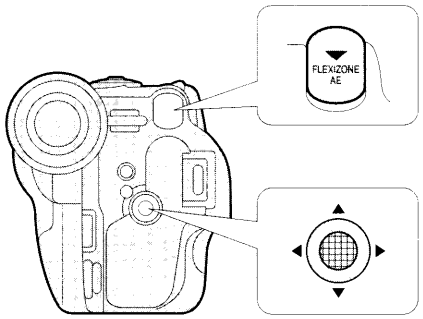


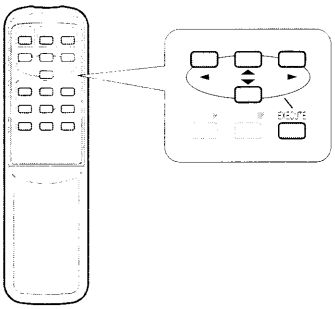


6. **You can program the Auto Editing Function to remember up to 8 different scenes in the same way.**

Notes:
- TOTAL at the top of the menu tells you the total running time of all the scenes you have selected.
- When editing from the start of the tape:
  For best results, let the tape run for about ten seconds according to the counter. Then set the first Cut-In point after that. Also, avoid setting the last Cut-Out point in the last ten seconds of the tape.

PREVIEW/START Function





```
EDIT TOTAL 0:19:47  STOP
CUT-IN     CUT-OUT  0:40:03
  0:01:20→ 0:04:05
  0:15:03→ 0:18:20
  0:20:15→ 0:30:32
  0:35:47→ 0:38:15

▶SET DELETE PREVIEW START CLEAR
```

```
EDIT TOTAL 0:19:47  STOP
CUT-IN     CUT-OUT  0:40:03
▶ 0:01:20→ 0:04:05
  0:15:03→ 0:18:20
  0:20:15→ 0:30:32
  0:35:47→ 0:38:15

 SET DELETE PREVIEW START CLEAR
```

Preview function

You can preview the editing program. The PREVIEW function plays all the selected scenes in the order they will appear on the final tape, automatically pausing at each "cut-in" and "cut-out" point to help editing.

1. **Use the FlexiZone controller to move down the screen to the bottom line, and then across to the PREVIEW function.**

2. **Press the FLEXIZONE AE button.**
   - The camera will now play all the scenes in the order you have programmed them.
   - In PREVIEW mode the tape starts a little before each "cut-in" point. It will pause for 2.5 seconds precisely at the "cut-in" point. It pauses again at the"cut-out" point.

Recording to the VCR (START function)

1. **Make sure the VCR is ready to record and on pause.**

2. **Use the FlexiZone controller to move down the screen to the bottom line, and then across to the START function.**

3. **The editing program starts when you press the FLEXIZONE AE button.**
   - The camera automatically records the scenes you selected onto the tape in the VCR.

CUT-IN/CUT-OUT Time Adjustment

E

"Cut-In" and "Cut-out" times

The point where a scene starts is called the "cut-in" point, and the point where it ends, the "cut-out" point.

Some VCR models take a second or two to actually start recording after they receive the command signal. If this happens you could lose the beginning of each scene. CUT-IN ADJUST prevents this by sending the command a little early.

CUT-OUT ADJUST prevents the end of the scene from being cut, by sending the command a little late.

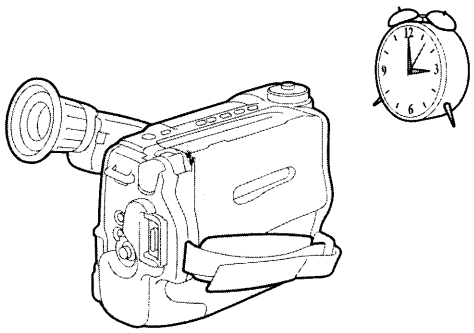
If you find you have either of these problems with your VCR, adjust these settings.

Use the menu to adjust the "cut-in" and "cut-out" points.

▶MENU
(see p. 19)

```
▶CUT-IN  ADJUST···-1.5
 CUT-OUT ADJUST···+0.8
```

1. **Open the editing menu and point the arrow at CUT-IN ADJUST.**
   - Point it at CUT-OUT ADJUST to change the timing of the "cut-out" point.
2. **Adjust the setting.**
   - CUT-IN ADJUST can be set up to 5 seconds early. (–5.0)
   - CUT-OUT ADJUST can be set up to 5 seconds late. (+5.0)
   - This can be set to an accuracy of one-tenth of a second.



How to calculate the best adjustment for the "cut-in" and "cut-out" points

Make a recording of a watch or clock with a second hand. If you can, use a stopwatch which shows tenths of a second. Use the Editing Function to edit this. You can then see exactly how many seconds it takes for the VCR to start to record.

1. **Use the camcorder to record a watch or clock with a second hand.**
2. **Set the program selector to EDIT and connect the camcorder to your VCR as on p. 33.**
3. **Set the CUT-IN ADJUST and CUT-OUT ADJUST to 0.0.**
   - Close the menu when finished.
4. **Make sure that the SET function at the bottom of the screen is on.**
5. **Input a scene which starts when the second hand reaches 12 and which finishes when the second hand reaches 12 again.**
   - Press the FLEXIZONE AE button when the second hand is exactly on 12.
   - If you are going to set CUT-OUT ADJUST, input another scene of something very different afterwards. Then you can see how it cuts from one scene to another.
6. **Record the scene to your VCR.**
   - Use the START function.
7. **Watch the scene on your VCR.**
   - Note the difference between the time the scene starts or ends and the time you pressed the FLEXIZONE AE button. For example:
   - If the scene starts when the second hand is two seconds after 12, you know that CUT-IN ADJUST should be set to –2.0. If it starts three seconds after, it should be set to –3.0, and so on.
   - If the scene ends at two seconds before 12, you know that CUT-OUT ADJUST should be set to +2.0. If it ends three seconds before , it should be set to +3.0, and so on.

Note:

- It may be best to repeat the calculation with the watch several times, and take the average difference.

Editing Scenes

Changing the "cut-in" / "cut-out" point

1. **Make sure the SET function at the bottom of the screen is highlighted.**
   - If not, use the Flexizone controller to move down the screen and then across to SET.

2. **Move up or down the screen with the Flexizone controller to the scene you want to alter.**

3. **Move the FlexiZone controller to the left or right until the time you wish to change is highlighted.**
   - Move it to the right once, and the "cut-in" point is highlighted.

     ▶ **0:01:20**→ 0:04:05

   - Move it to the right again, and the "cut-out" point is highlighted.

     ▶ 0:01:20→ **0:04:05**

   - Move it to the right once more, and the whole line is highlighted. Use this if you want to move the line, without changing the times (see "Reordering Scenes" below.)

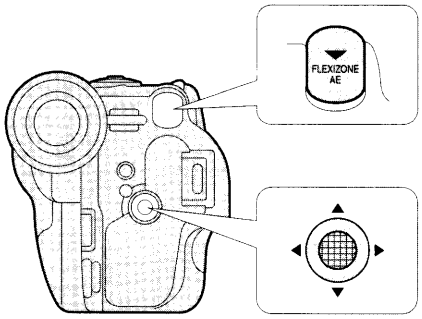
     ▶ 0:01:20→ 0:04:05

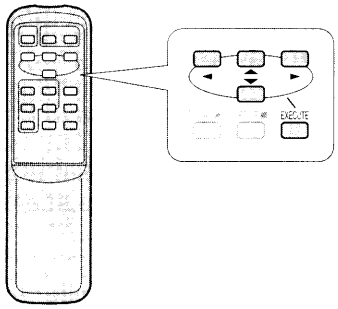
   - Move it to the right again, and none of the line is highlighted.
   - Move the controller to the left to go through the same sequence in reverse order.

4. **Use the playback keys as normal to operate and play the tape again. (First rewind or fast forward if necesary.)**

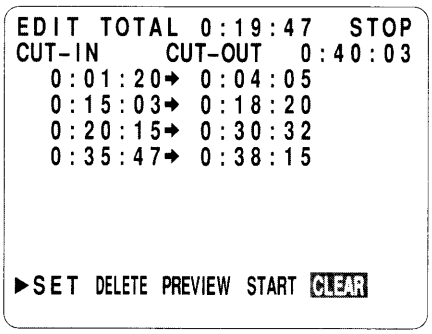
5. **Press the FLEXIZONE AE button (or the EXECUTE button on the wireless controller) to indicate where you now want the scene to start or end.**
   - This position according to the counter will be displayed in the viewfinder.

CLEAR/DELETE Function





Clearing the whole display (CLEAR function)

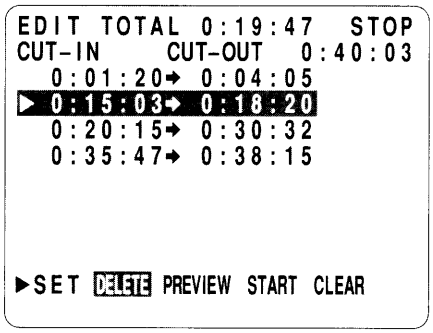


This deletes the whole program.

1. **Use the FlexiZone controller to move down the screen to the bottom line, and then across to the CLEAR function.**

2. **Press the FLEXIZONE AE button (or the EXECUTE button on the wireless controller.).**
   - All the lines are now blank. All data is deleted.
   - Please do not do this by mistake, or you will have to start again from the beginning.

Deleting a scene (DELETE function)



This deletes a scene from the program.

1. **Use the FlexiZone controller to move down the screen to the bottom line, and then across to the DELETE function.**

2. **Use the FlexiZone controller to move directly up the screen to highlight the scene you want to delete.**
   - Push the FlexiZone controller straight up.

3. **Press the FLEXIZONE AE button (or the EXECUTE button on the wireless controller.).**
   - The scene is deleted and that line is now blank.
   - You can insert a new scene here if you wish, using the SET function as described in "Choosing a scene" above.
   - If this line is left blank, this will not affect the rest of the recording, and the next scene will smoothly follow the previous one.

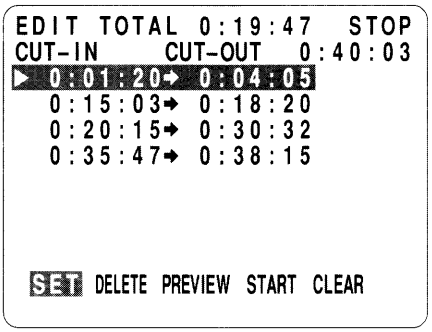
Reordering Scenes

You can move the scenes around and reorder them.

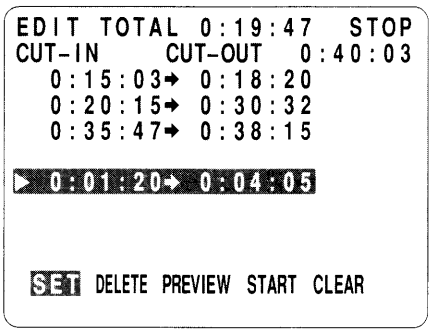
1. **Make sure the SET function at the bottom of the screen is highlighted.**
   - If not, use the FlexiZone controller to move down the screen and then across to SET.

2. **Move up or down the screen with the FlexiZone controller to the scene you want to move.**

3. **Move the FlexiZone controller to the left once to highlight the entire line.**

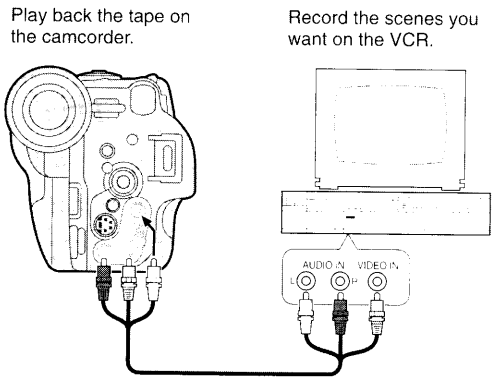


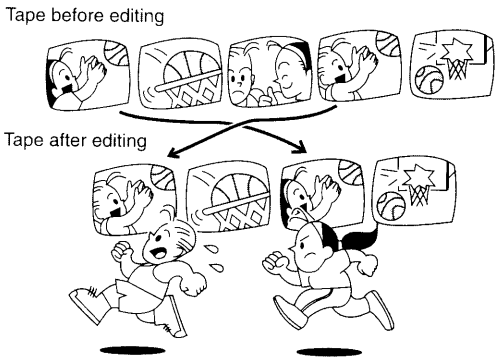
4. **Move the FlexiZone controller up or down to where you want it.**
   - The line of data moves with it.
   - Move the FlexiZone controller to the right once when the scene is correctly positioned.



5. **Repeat as necessary with the other scenes until they are in the order you want them.**

Simple Editing to a VCR





If you cannot find the appropriate remote control setting for the camcorder to control your VCR, you still can edit a tape to the VCR as follows.

Preparations

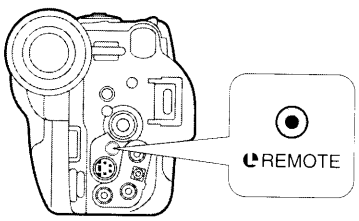
1. **Connect the camera to the VCR.**
   - See "Playback Connection" on p. 14.
2. **Turn the TV on.**
   - Be sure to set it to the video channel, or set the TV/VIDEO selector to VIDEO.
3. **Turn on the VCR and load a blank cassette.**
   - See your VCR instruction manual for details.
4. **Set the VCR's input selector to LINE, and put it in record pause mode.**
5. **Turn the camera's program selector to PLAY, and load your recorded cassette.**

Basic editing

1. **Find a point on your recorded cassette slightly ahead of the section you want to copy.**
2. **Start to play it back while you monitor the picture on the TV.**
3. **Start recording on the VCR as soon as the section you want to copy appears on the screen.**
4. **Pause the VCR at the end of the section you want to copy, then stop playback on the camera.**
5. **Repeat steps 1 to 4 until your edited recording is complete.**

REMOTE terminal

The REMOTE terminal allows you to connect the camera to equipment such as the VE-100 Video Editor (p. 46). Some buttons on other editing equipment may operate differently from those on the camera.



Notes:

- (LANC) is a trademark. It stands for Local Application Control Bus System.
- We cannot guarantee the results when connecting to equipment not bearing the LANC symbol.

Making Better Videos

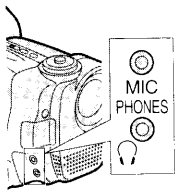
Holding the camera

For maximum stability, place your right hand through the grip belt and keep your right elbow pressed against your body. Rest your left hand lightly on the side of the camera. With practice, you will be able to operate the controls by touch, without taking your eye off the action.

Using a tripod

To prevent any unwanted movement, you can mount the camera on a tripod, and operate it with the wireless controller

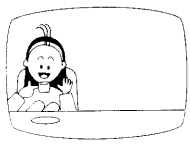
Sound recording



You can monitor the sound while recording by attaching stereo headphones to the camera's ∩ PHONES terminal.

For greater creative control, you can connect an external microphone to the MIC terminal.

Composition



The most important element in the scene does not have to be in the centre. For a more interesting picture. try to position your subject so it is slightly to one side. Leave some space on the side of the frame that the subject is facing or moving towards.

Don't cut off the top of the subject's head, and don't cut people off at the neck, hips or knees (move a little bit above or below).

Watch out for distracting objects in the background.

Picture angle

Long shot

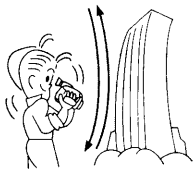
Medium shot

Close-up

Instead of zooming while recording, try to choose your picture angle before you begin. A good way to tell a story with video is to begin with a long shot that establishes the situation, and then move in with medium shots and close-ups to show the details. Remember to change your viewpoint for each shot.

Camera moves

Pan



Tilt

Use pans to record a landscape or follow a moving subject. Decide the area you want to cover and stand facing the end of your panning angle. Without moving your feet, turn your waist to the starting position. Start recording, and after a few seconds begin to turn slowly from the waist. Hold the final image for a few seconds before you stop recording.

Tilt the camera up to exaggerate the height of the subject. Tilt down from the top of a building, for example, as an introduction to subjects at the bottom.

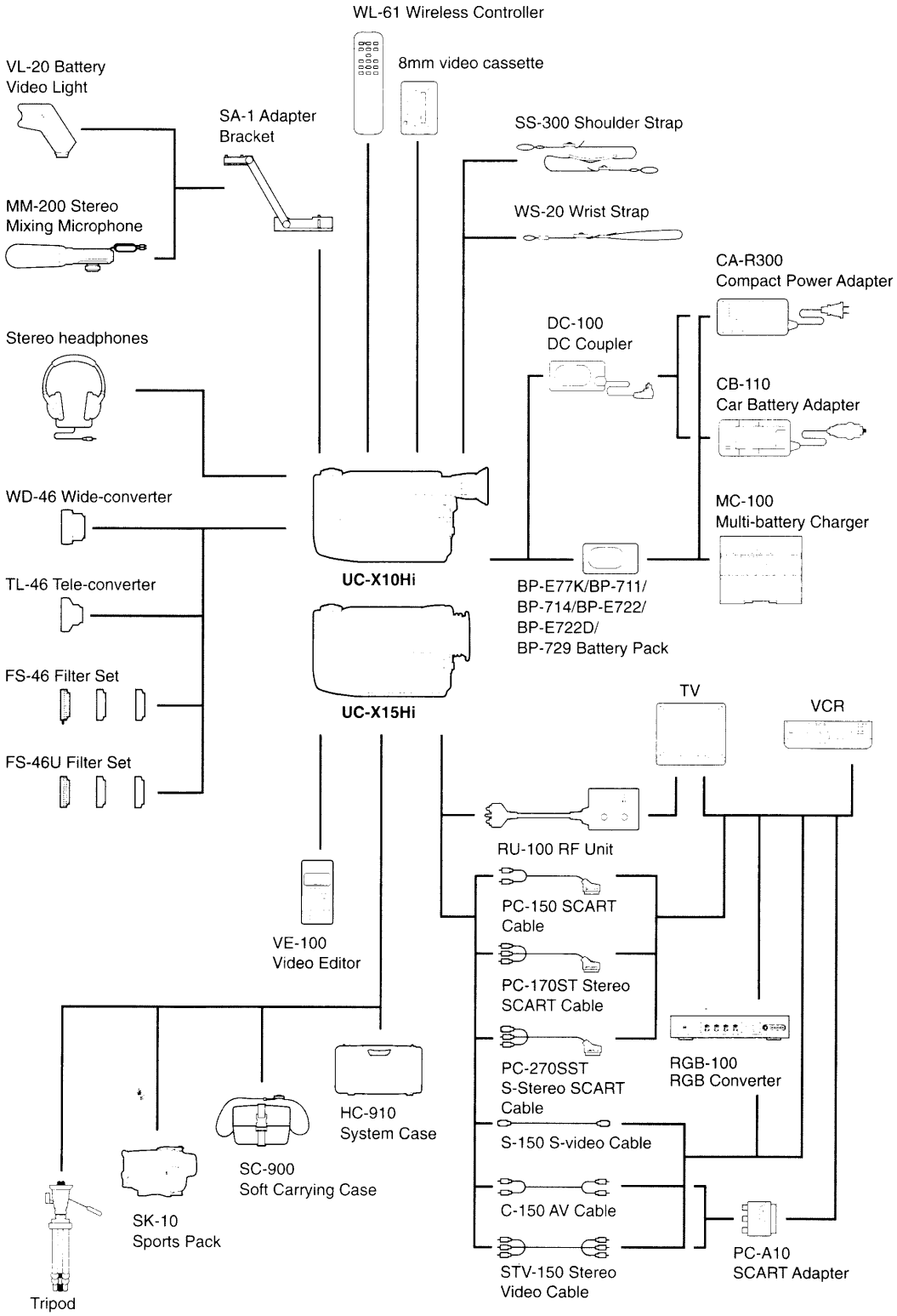
Remember that any camera movement or change in picture angle should have a definite purpose. Avoid unnecessary or half-hearted movements.

Notes:

- When you are using a tripod, be careful not to leave the viewfinder exposed to bright sunlight or it will melt. (The light is concentrated by the viewfinder lens.) You may be able to move the viewfinder out of direct sunlight by pushing it upright, or by moving it back down to horizontal.
- Make sure that the fastening screw of the tripod is no longer than 5.5 mm (3/16 inch), or it will damage the camera.
- The camera has a built-in wind screen to prevent wind noise from interfering with the soundtrack. This has no effect when using an external microphone.

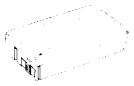
UC-X10Hi/UC-X15Hi Video System

• Availability differs from area to area.

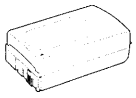


Optional Accessories

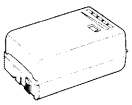
BP-711
BP-E77K
BP-714



BP-E722
BP-729



BP-E722D



Battery Packs

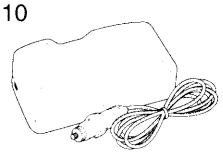
As well as the battery pack supplied with your camera, a whole range of optional battery packs is available.
Recording times are as follows:

BP-711/BP-E77K ..... 60 min.
BP-714 ..... 85 min.
BP-E722/E722D ..... 120 min.
BP-729 ..... 170 min.

The BP-E722D has a five-LED display which lets you know just how much charge you have left.

- Availability of the battery packs differs from area to area.

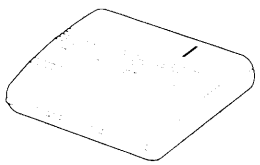
CB-110



CB-110 Car Battery Adapter

To power your camera or recharge battery packs on the move, the car battery adapter plugs into your car's cigarette lighter socket and runs off a 12/24 V negative ground battery.

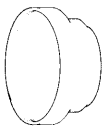
MC-100



MC-100 Multi-battery Charger

The microcomputer-controlled MC-100 takes up to four battery packs at a time and dramatically cuts recharge times (it can charge the BP-711/BP-E77K in just 45 minutes.) It also performs an automatic charge/discharge/recharge cycle which refreshes battery packs, restoring them to full capacity.

TL-46

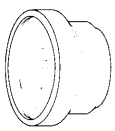


TL-46 Tele-converter

This tele-converter lens increases the focal length of the camera lens by a factor of 1.4. The zoom and autofocus operate as usual, so you can take full advantage of the extra range.

- If you have a "professional-type" monitor, there may be some vignetting.

WD-46

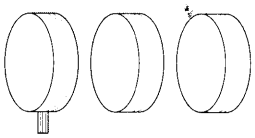


WD-46 Wide-converter

This lens decreases focal length by a factor of 0.7. giving you a wide perspective for indoor shots or panoramic views — and you can still use both zoom and autofocus.

- If you have a "professional-type" monitor, there may be some vignetting.

FS-46

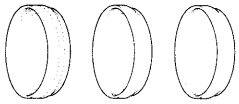


FS-46 Filter Set

Three special effects filters to add a creative touch to your recordings: multiple-image, R-cross and zoom-spot.

- Turn autofocus off when using special effects filters.
- If you have a "professional-type" monitor, there may be some vignetting.

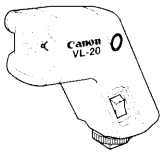
FS-46U



FS-46U Filter Set

Ultraviolet, neutral density and circular polarising filters help you take control of difficult lighting conditions.

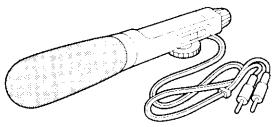
VL-20



VL-20 Battery Video Light

This compact yet powerful video light can be used for both indoor and outdoor shooting. There are no cables — the BP-711/BP-E77K Battery Pack fits neatly inside, powering it for up to 15 minutes. For longer recordings, the BP-E722/BP-E722D and BP-729 give about 35 and 50 minutes' use respectively. The SA-1 Adapter Bracket is required.

MM-200

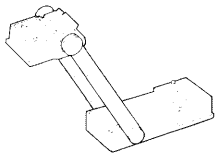


MM-200 Stereo Mixing Microphone

The MM-200 mixes live sound and music, so you can create the ideal soundtrack for your video productions. The SA-1 Adapter Bracket is required.

- The sound and DC cables can be separated from each other at any point along their length.

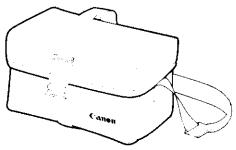
SA-1



SA-1 Adapter Bracket

Attaches a video light or microphone securely to the camera.

SC-900



SC-900 Soft Carrying Case

This lightweight bag keeps the camera within easy reach without weighing you down or getting in the way.

WS-20

WS-20 Wrist Strap

Provides an extra measure of protection for active shooting.

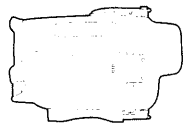
HC-910

HC-910 System Case

This solid, lockable case provides safe and stylish protection for the camera during transportation and storage.

Optional Accessories

SK-10

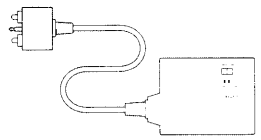


SK-10 Sports Pack

Completely waterproof your camera, while retaining control of its important functions. You can freely record active holidays at the beach, or on the ski slopes.

- The sports pack can be used underwater at depths of up to 3 metres. For safety reasons, it is designed to float, so it is best used close to the surface.
- When installing the UC-X10Hi/UC-X15Hi in the sports pack. use mounting plate B, and guide mark 3.

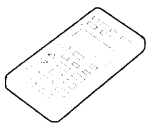
RU-100



RU-100 RF Unit

This optional converter allows the camera to be connected to the aerial terminal of any TV. It can be a useful accessory while travelling. as you may need it if you want to connect the camera to a TV in your hotel room.

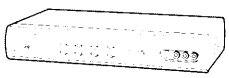
VE-100



VE-100 Video Editor

This easy-to-use editor controls the camera and a video recorder simultaneously for fast, accurate assembly editing. Not only does it link up to any (LANC) terminal, it can even learn the remote control signals used by most VCRs.

RGB-100



RGB-100 RGB Converter

Even without an S-video input, you can appreciate the difference Hi8 makes — the RGB-100 converts the camera's S-video signal to RGB, and links up with your TV's SCART terminal.

This mark identifies genuine Canon video accessories. When you use Canon video equipment, we recommend Canon-brand accessories or products bearing this same mark.

Cautions and Maintenance

Cautions

Avoid high temperatures and high humidity.

- Do not leave the camera inside a car in hot weather, for example.
- Be careful of heat radiating from video lighting equipment.
- Do not take the camera into a humid room.

Avoid sudden changes in temperature.

- If you take the camera from a cold place to a warm place, condensation may form on the lens and internal parts (see p. 48).

Do not point the lens or viewfinder at strong light sources.

- Never point it at the sun, and do not leave it aimed at a bright subject.
- Be especially careful when leaving the camera on a tripod.

Avoid magnetic or electric fields.

- Do not use the camera close to TV transmitters, portable communication devices or other sources of electric or magnetic radiation. They may cause picture interference, or permanently damage the camera.

Do not expose the camera to water.

- Cover the camera when you are recording in light rain or mist.
- There is a risk of electric shock if water gets inside the camera — contact qualified service personnel as soon as possible.

Protect the lens.

- Sand and dust can damage the lens — be especially careful on windy days.

Handle the camera gently.

- Vibration or shock can cause damage.
- Do not use the viewfinder as a carrying handle.

Keep the camera the right way up.

- Try to keep your camcorder the right way up and horizontal during use. When a cassette is loaded, if you lay the camcorder on its side or upside down the tape position may change. This could result in lower performance or even malfunction.
- Be especially careful when the tape is moving – Handling the camera with respect, so that you can use it trouble free.

Do not disassemble the camera.

- This is very dangerous as there is a risk of electric shock — if the camera does not function properly, take it to qualified service personnel.

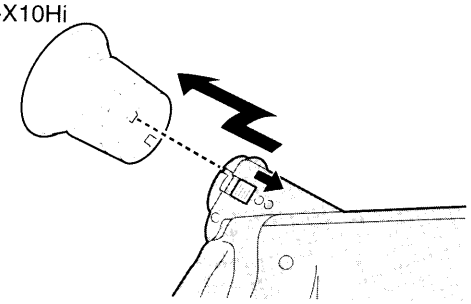
Note:

- These cautions also apply to accessories such as battery packs and cassettes.

Maintenance

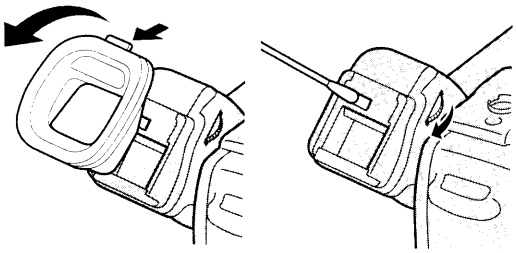
Viewfinder

UC-X10Hi



- Clean the viewfinder screen using a blower brush. First, remove the eyepiece: press and hold the RELEASE switch, pull the eyepiece out, turn it anticlockwise, and slide it off. To reattach it, align the mark on the eyepiece with the mark on its base and press it on until it clicks back into place.

UC-X15Hi



- To clean the viewfinder screen, remove the small rubber eyecup and turn the viewfinder focusing wheel in the direction of the arrow until it stops. Insert a dry cotton swab as shown, and carefully wipe the screen (located at the top of the viewfinder).

Camera body and lens

- Use a soft, dry cloth to clean the camera body or lens. Never use chemically treated cloth or volatile solvents such as paint thinner.

Video heads

- Clean the video heads only when necessary, preferably using Canon's CC-8 Video Head Cleaning Cassette.
- Do not use a wet-type cleaning cassette as this can cause damage.

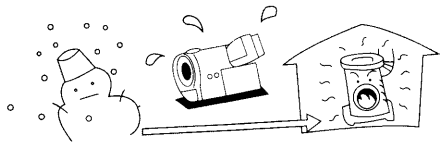
Storage

If you do not intend to use the camera for some time, store it in an area which is free of dust and moisture, and where the temperature is no higher than 30°C (86°F). After storage, check each part and function of your camera to make sure everything is still working properly.

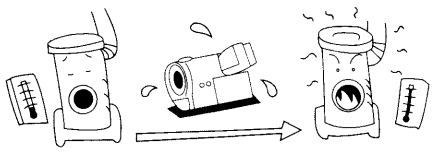
Condensation

Condensation may form on the camera when it is moved from a cold place to a warm place. Using the camera while condensation is present can damage both the tape and the camera.

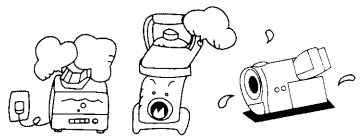
Condensation may become a problem:



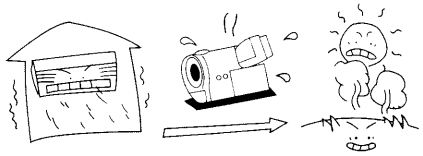
When you bring the camera from a cold place to a warm room



When a cold room is heated rapidly



When the camera is left in a humid room



When the camera is taken from an air-conditioned room to a warm, humid place

Protecting the camera from condensation

- Before you bring the camera to a warm or humid place where condensation is likely to be a problem, unload the cassette and put the camera in a plastic bag. Wait until the camera reaches room temperature before you take it out of the bag.

What happens when condensation is detected

- The operation indicator flashes and the 💧 mark flashes in the viewfinder. If there is a cassette in the camera, it stops automatically and EJECT flashes in the viewfinder.
- The camera may not detect the condensation immediately — the condensation warning may not start flashing for 10 to 15 minutes.
- You cannot load a cassette when condensation is detected.

What you should do

- Remove the cassette, leave the cassette compartment open, and turn the camera off.
- Leave it in a dry place until the condensation evaporates. After the condensation warning stops flashing, wait at least another hour before trying to use the camera.

Using the camera abroad

Power sources

- You can use the compact power adapter to operate your camera and charge battery packs in any country where the electricity supply is between 100 and 240 V AC, 50–60 Hz. Contact your Canon dealer for information about plug adapters for overseas use.

TV playback

- Although you can always play back your recordings in the viewfinder, your camera can only be connected to TVs which use its PAL system. This TV system is used in the following countries:
  Algeria, Australia, Austria, Bangladesh, Belgium, Brunei, China, Denmark, Finland, Germany, Hong Kong, Iceland, India, Indonesia, Ireland, Italy, Jordan, Kenya, Kuwait, Liberia, Malaysia, Malta, Mozambique, the Netherlands, New Zealand, North Korea, Norway, Oman, Pakistan, Portugal, Qatar, Sierra Leone, Singapore, South Africa, Spain, Sri Lanka, Swaziland, Sweden, Switzerland, Tanzania, Thailand, Turkey, Uganda, United Arab Emirates, United Kingdom, Yemen, former Yugoslavia, Zambia.

Troubleshooting

Refer to this checklist first if you have any problems with your camera. Possible explanations are given below each problem on the list — turn to the page numbers in brackets for more information.

Make sure that the camera is properly connected if you are using it with a TV or VCR. Consult your dealer or service outlet if problems persist.

? Nothing happens when I press the buttons.

- You haven't turned the camera on (p. 6, 13).
- You haven't loaded a cassette, or it is set for erasure prevention (p. 11).
- The tape has reached the end.
- The battery pack is exhausted, or not properly attached (p. 8, 9, 10).
- You need to select a different recording program to use that function (p. 24).

? The camera turned itself off.

- You left it in record pause mode for more than about five minutes (p. 6).
- The battery pack is exhausted (p. 9, 10).

? The start/stop button doesn't work.

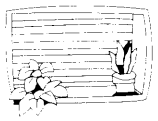
- The program selector is not set to a recording program. (p. 24)
- The STANDBY cover is closed (p. 6).
- You haven't loaded a cassette, or it is set for erasure prevention (p. 11).
- The tape has reached the end.

? There's no picture in the viewfinder.

- The program selector is not set to a recording program. (p. 24)
- The STANDBY cover is closed (p. 6).

? The camera won't focus.

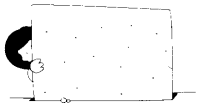
- The camera is on manual focus. (p. 27)
- The viewfinder lens needs adjusting (p. 12).
- The lens is dirty (p. 47).
- Some subjects are not suitable for autofocus.



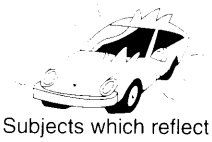
Subjects with horizontal stripes

Several subjects in the viewfinder at different distances

Subjects behind glass



Subjects without much contrast (such as a white wall)



Subjects which reflect too much light (such as shiny car exteriors)

Rapidly moving subjects

Slanted subjects

Dark subjects

Night scenes

In these situations, you will often get better results using manual focus (see p. 27). Focus on something which is about the same distance away, lock the focus, and then point the camera at your original, hard-to-focus subject.

? The ▶ (play) button doesn't work.

- The program selector is not set to PLAY. (p. 13)
- You haven't loaded a cassette (p. 11).
- The tape has reached the end.

? There's a bright stripe on the screen.

- When you are recording in dark places, a bright light in the scene may cause a vertical bar, called smear, to appear on the screen.

? The playback picture is rough.

- If your recordings do not play back smoothly, clean the video heads (p. 47).

? There's no picture on the TV screen, even though the tape is moving.

- The video heads need cleaning (p. 47).
- The TV/VIDEO selector on the TV isn't set to VIDEO (p. 14).
- If the camera is connected using the optional RF unit, you haven't selected the video channel (p. 16).

? The wireless controller doesn't work.

- The remote sensor is turned off (p. 18).

? The tally lamp doesn't flash.

- It is turned off (p. 18).

? The operate indicator is flashing.

- Check the viewfinder displays (p. 51).

? There are air bubbles inside the lens.

- This is unlikely, but may happen if you use the camera in places where the air pressure is very low, in an airplane for example. The bubbles will disappear a week or so after you return the camera to normal atmospheric pressure.

? Malfunction

- External interference may cause the camera's microprocessor to malfunction temporarily. If random letters appear in the viewfinder or if normal operation is interrupted, remove and then replace the power source (and if necessary, the backup battery).

? The Editing function does not work, or ? I tried to set my camera to control my VCR remotely, but I cannot find the right setting. (p. 34)

- Move the cables and the strap, and everything else out of the way of the infra-red remote control signals to VCR. (p. 33)
- Move the camera so it is in the right position to send signals to the VCR's sensor. (p. 33)
- To prevent interference, do not use other remote controls while using the Auto Editing Function.
- It is unlikely, but you may have a VCR which the Auto Editing Function cannot control. Use the "Simple Editing" method on p. 41.

? The START function does not work, and the display is flashing.

- Reset the flashing part of the display. Make sure not to put a "cut-in" or "cut-out" point in the first or last ten seconds of the camcorder's tape. (p. 35)

? The scenes in the final tape recorded to the VCR start and stop in odd places.

- Check that the "cut-in" and "cut-out" adjustments are correctly set. (p. 37)
- Depending on circumstances and the tape you are using, you may not be able to set this precisely as you would wish.

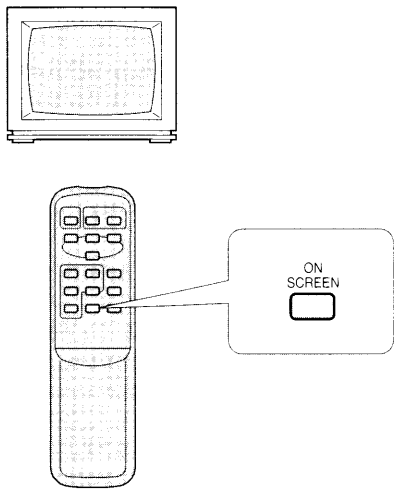
? The Auto Editing Function does not work at all.

- Check that you have set it correctly to remotely control your VCR. (p. 34)

About the LCD Viewfinder (UC-X15Hi)

Liquid Crystal Viewfinders use extremely high-precision technology, but there will be pixels which do not light up or which are continuously lit. This is not an error and will not affect the recording.

Viewfinder Displays



To display the date and time on a connected TV, press the DATE button. Press the TITLE button to see the title. These displays are recorded just as they appear on the screen.

Use the wireless controller's ON SCREEN button to choose whether or not the other viewfinder displays appear on the TV screen. They will disappear from the screen if you start recording with the camera.
You can also activate the ON-SCREEN function with the Custom Keys.

indicates a flashing display.

2:35 PM
18.OCT.1997
Date and time display (p. 21)

--:-- --
--.---.----
The date and time have not been set. This display will not be recorded (p. 21)

BON VOYAGE
Title (p. 22)

Hi8
Hi8 recording (p.11)

PAUSE
Record pause mode (p. 6)

REC
Recording (p. 6)

▶ ◀
Record search, forward and reverse (p. 30)

▶
Playback (p. 13)

▶II
Still playback (p. 13)

▶▶
Fast forward (p. 13)

▶▶
Fast forward playback or high-speed search (p. 13)

◀◀
Rewind (p. 13)

◀◀
Rewind playback or high-speed search (p. 13)

STOP
The tape is stopped (p. 13).

EJECT
The camera is ejecting the tape (p. 11).

EJECT
The safety mechanism is activated. Unload the cassette and turn the camera off. Turn it on again and reload the cassette.

No cassette is loaded, or the cassette is set for erasure prevention (p. 11).

END
The tape has reached the end.

T.RTN ▶▶ T.RTN ◀◀
Tape return, forward and reverse (p. 13)

The battery pack is nearly exhausted (p. 8, 9).

The backup battery is nearly exhausted, or not inserted properly (p. 10).

W T
Zoom display (p. 17)
Optical zoom

```
MENU
▶CUSTOM KEY INFO·ON
 CUSTOM KEY 1····FADE
 CUSTOM KEY 2····BLC
 SENSOR··········ON
 TALLY···········ON
 SHUTTER·····10000
 AUTO FOCUS·····ON
 FLEXIZONE CONT.·-↑-

 AUTO DATE···  12:00 AM
            31.JAN.1997
```
Camera menu (p.19)

```
MENU
▶CUSTOM KEY INFO·ON
 CUSTOM KEY 1····FADE
 CUSTOM KEY 2····BLC
 SENSOR··········ON
```
PLAY menu (p. 19)

```
MENU
▶RECORDER SELECT·1-A
 CUT-IN  ADJUST···-1.5
 CUT-OUT ADJUST···+0.8
 SENSOR··········ON
```
EDIT menu (p. 19)

The image stabilizer is turned on (p. 17).

S OFF
Remote sensor is turned off (p. 18)

T OFF
Tally lamp is turned off (p. 18)

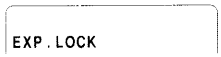
T/S OFF
Tally lamp and remote sensor are turned off. (p. 18)

Specialised AE programs (p. 24)

Functions operated by the CUSTOM KEYs (p. 20)

Autofocus is turned off (p. 27)

FlexiZone Control frame (p. 26, 28)

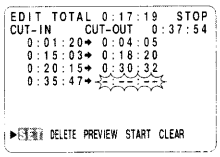


FlexiZone AE (p. 28)

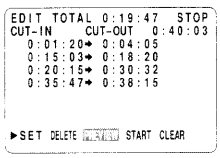
Backlight compensation (p. 28)

Manually selected shutter speed (1/1000th of a second in this example) (p. 29)

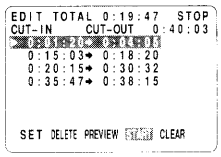
Auto Editing Function



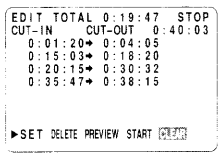
Choosing a scene (SET function) (p. 35)



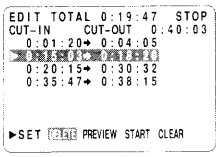
Preview function (p. 36)



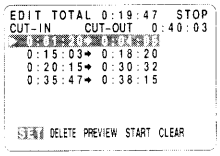
Recording to the VCR (START function) (p. 36)



Clearing the whole display (CLEAR function) (p. 39)



Deleting a scene (DELETE function) (p. 39)



Reordering scenes (p. 40)

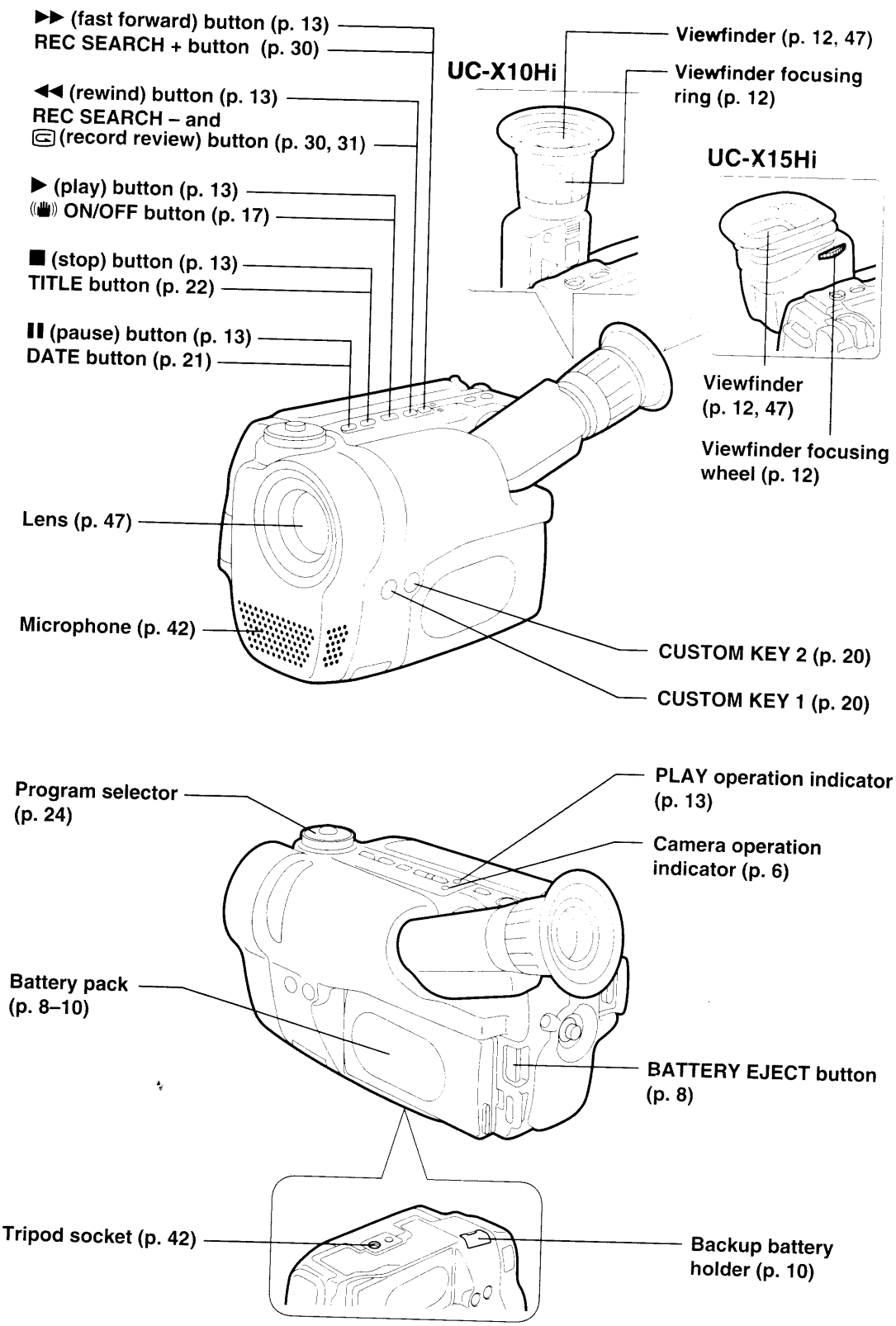
Condensation warning (p. 48)

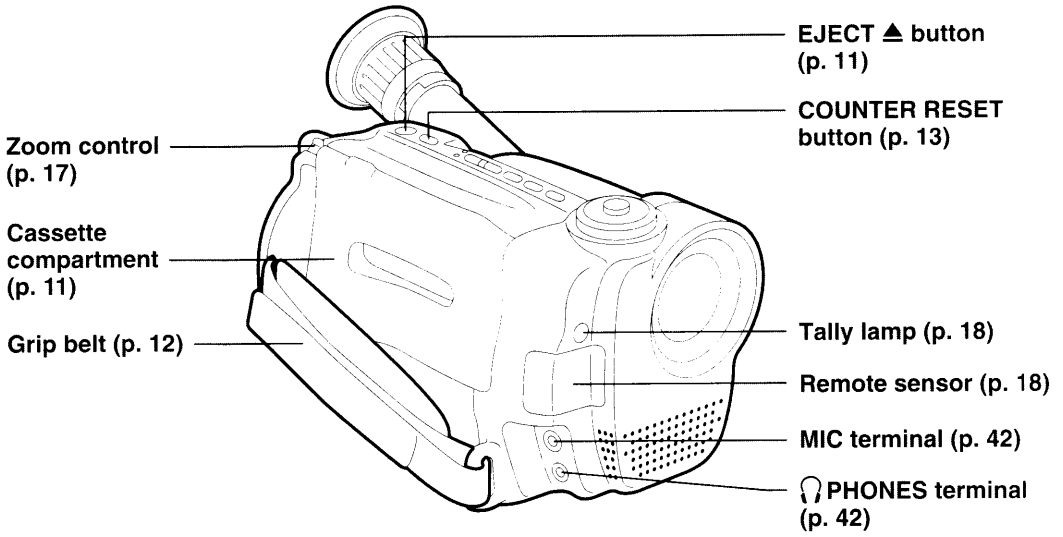
Tape counter

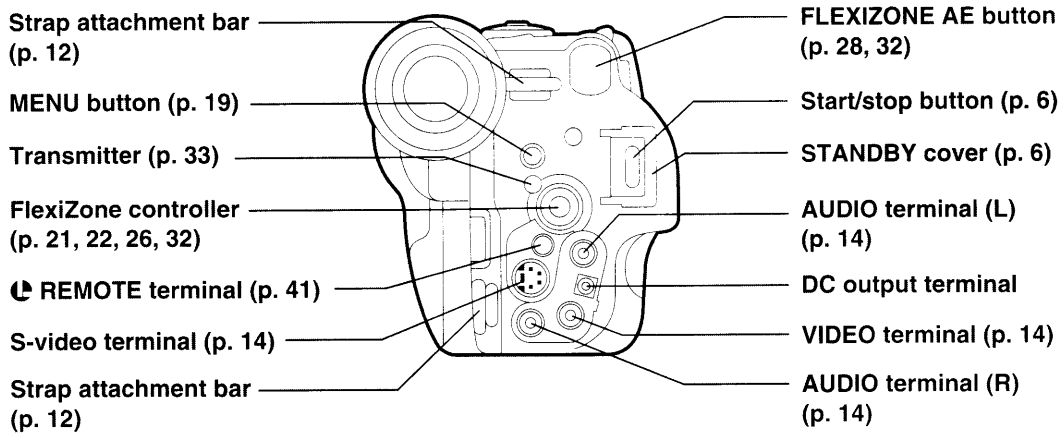
The tape counter indicates the approximate running time of the tape — 1 hour, 23 minutes and 45 seconds in this example. The tape counter is reset when a cassette is loaded, or when you press the COUNTER RESET button (p. 13).

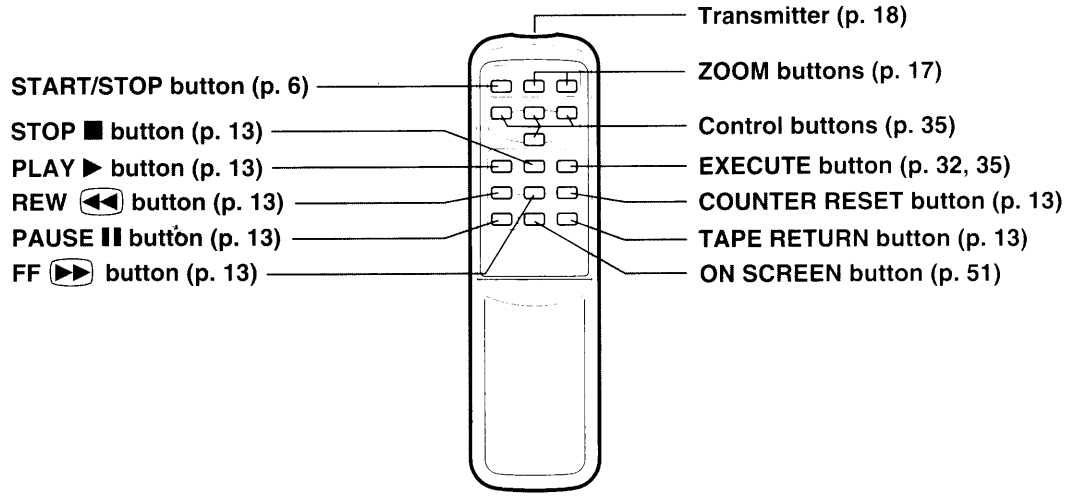
Recording reminder

When you start recording, the camera counts from 0SEC to 10SEC. Shots which are shorter than 10 seconds may be difficult to edit later. On the other hand, if you are not planning to edit the recording, remember that a shot which does not contain action should generally last no longer than 10 seconds.


▶▶ (fast forward) button (p. 13)
REC SEARCH + button (p. 30)
◀◀ (rewind) button (p. 13)
REC SEARCH – and
(record review) button (p. 30, 31)
▶ (play) button (p. 13)
ON/OFF button (p. 17)
■ (stop) button (p. 13)
TITLE button (p. 22)
❚❚ (pause) button (p. 13)
DATE button (p. 21)
Lens (p. 47)
Microphone (p. 42)
UC-X10Hi
Viewfinder (p. 12, 47)
Viewfinder focusing ring (p. 12)
UC-X15Hi
Viewfinder (p. 12, 47)
Viewfinder focusing wheel (p. 12)
CUSTOM KEY 2 (p. 20)
CUSTOM KEY 1 (p. 20)
Program selector (p. 24)
PLAY operation indicator (p. 13)
Camera operation indicator (p. 6)
Battery pack (p. 8–10)
BATTERY EJECT button (p. 8)
Tripod socket (p. 42)
Backup battery holder (p. 10)


EJECT ⏏ button (p. 11)
COUNTER RESET button (p. 13)
Zoom control (p. 17)
Cassette compartment (p. 11)
Grip belt (p. 12)
Tally lamp (p. 18)
Remote sensor (p. 18)
MIC terminal (p. 42)
PHONES terminal (p. 42)


Strap attachment bar (p. 12)
MENU button (p. 19)
Transmitter (p. 33)
FlexiZone controller (p. 21, 22, 26, 32)
REMOTE terminal (p. 41)
S-video terminal (p. 14)
Strap attachment bar (p. 12)
FLEXIZONE AE button (p. 28, 32)
Start/stop button (p. 6)
STANDBY cover (p. 6)
AUDIO terminal (L) (p. 14)
DC output terminal
VIDEO terminal (p. 14)
AUDIO terminal (R) (p. 14)


Transmitter (p. 18)
START/STOP button (p. 6)
STOP ■ button (p. 13)
PLAY ▶ button (p. 13)
REW ◀◀ button (p. 13)
PAUSE ❚❚ button (p. 13)
FF ▶▶ button (p. 13)
ZOOM buttons (p. 17)
Control buttons (p. 35)
EXECUTE button (p. 32, 35)
COUNTER RESET button (p. 13)
TAPE RETURN button (p. 13)
ON SCREEN button (p. 51)

Specifications

E

UC-X10Hi/UC-X15Hi

Power supply (rated):	6 V DC
Power consumption:	5.6 W
Television system:	CCIR standard (625 lines, 50 fields) PAL colour signal
Video recording system:	2 rotary heads, helical scanning system Luminance signal: FM azimuth recording Chrominance signal: Converted subcarrier phase shift recording (8mm video standard)
Audio recording system:	Frequency multiplexing with the video signal by 2 rotary heads (2 channels)
Image sensor:	¼-inch CCD (charge-coupled device), 470,000 pixels (440,000 effective pixels)
Tape format:	8mm video cassette, metal evaporated/metal particle
Tape speed:	20.05 mm/s
Maximum recording time:	90 minutes (with a P5-90 cassette)
Fast forward/rewind time:	Approx. 6 minutes (with a P5-90 cassette)
Lens:	f/1.6–3.7, 22X power zoom, 3.9–85.8 mm
Filter diameter	46 mm
Focusing system:	TTL autofocus with FlexiZone AF; manual focusing possible
Minimum focusing distance:	Wide-angle end: 1 cm (⅜ in) Telephoto end: 80 cm (2 ft 8 in) Intermediate zoom position: 1 m (3 ft 4 in)
Minimum illumination:	3 lx
Recommended illumination:	More than 100 lx
Electronic viewfinder:	UC-X10Hi: ½-inch monochrome CRT UC-X15Hi: 0.55-inch colour LCD
Microphone:	Stereo electret condenser microphone
Input level:	Microphone terminal: –58 dBV/600 ohms unbalanced
Input impedance:	Microphone terminal: more than 5 kohms
Output level:	Video terminal: 1 Vp-p/75 ohms, unbalanced S-video terminal: 1 Vp-p (Y signal), 0.3 Vp-p (C signal), unbalanced Audio terminal: –10 dBV, less than 3 kohms, unbalanced
Operating temperature range:	0°–40°C (32°–104°F)
Dimensions:	UC-X10Hi: 105 X 112 X 206 mm (4⅛ X 4⁷⁄₁₆ X 8⅛ in) UC-X15Hi: 106 X 109 X 184 mm (4³⁄₁₆ X 4⁵⁄₁₆ X 7¼ in)
Weight:	770 g (1 lb 11⅛ oz)

BP-711 Battery Pack

Battery type:	Rechargeable nickel cadmium battery
Rated voltage:	6 V DC
Operating temperature range:	0°–40°C (32°–104°F)
Dimensions:	22.5 X 47 X 90 mm (⅞ X 1⅞ X 3⅝ in)
Weight:	150 g (5¼ oz)

Weight and dimensions are approximate
Errors and omissions excepted.
Subject to change without notice.

Index

A Abroad, Using the Camera 48
Accessories 3, 44
Adapter, Mains 7, 8, 10
AE Programs 24, 25
Audio/Video Terminals 14
Auto Editing Function 32–40
Autofocus 26

B Backlight Compensation 28
Backup Battery 10
Basic Recording 6
Battery Pack 8–10

C Cables 3, 14, 15,16
Cassettes 11
Cautions and Maintenance 47
Charging the Battery Pack 8, 9
Choosing a Scene, Editing Function 35
Cleaning the Camera 47
CLEAR Function 39
Compact Power Adapter 7, 8, 10
Condensation 48
Connection to TV or VCR 14, 33, 41
Custom Keys 20
Cut-In/Cut-Out Points 35, 38
Cut-In/Cut-Out Adjustment 37

D Date and Time Display 21
DC Coupler 7
DELETE Function 39
Discharging the Battery Pack 9, 10

E Easy Recording 24
Editing, Simple 41
Editing Program 32
Editing Scenes 35, 38
Exposure Control 28
Exposure Programs 24

F Fade 23
Fast forward/Fast Forward Playback 13
Feedback 14
FlexiZone AE 28
FlexiZone AF 26
FlexiZone Control Frame 26, 28
FlexiZone Recording 24
FlexiZone Setting 26
Focusing 26
Focus Lock 27

G Grip Belt 12

H Head Cleaning 47
Hi8 11
High-Speed Search 13

I Image Stabilizer 17
Inputting a Scene 35
Introducing the UC-X10Hi/UC-X15Hi 4

L LANC 41
Left Hand with FlexiZone 26
Lens Cap 6, 12, 47
Lithium Battery 10
Loading Cassettes 11

M Maintenance 47
Making Better Videos 42
Manual Focus 27
Manual Shutter 29
Menus 19, 51
Microphone 42

N Nomenclature 53

O Optional Accessories 44

P Pause, Record 6
Playback 13
Playback Connection 14
Portrait 25
Power Sources 7
Preparing the Camera 12
PREVIEW Function 36

R Recharging the Battery Pack 9, 10
Recorder Select 34
Recording 6
Recording Programs 24
Recording to a VCR 36, 41
Record Pause Mode 6
Record Review 31
Record Search 30
Refreshing the Battery Pack 10
Remote Sensor 18
Remote Control of VCR 33
Reordering Scenes 40
Rewind/Rewind Playback 13

S Sand & Snow 25
Sensor, Remote 18
SET Function 35, 38, 40
Shoulder Strap 12
Shutter Speeds 29
Specifications 55
Sports 24
Spotlight 25
START Function 36
Storage 47

T Tally Lamp 18
Tape Counter 13, 52
Tape Return 13
Telephoto 17
Temperature 9, 47
Time Display 21
Titles 22
Tripod 42
Troubleshooting 49

U UC-X10Hi/UC-X15Hi Video System 43

V Video Cassettes 11
Video Channel 16
Viewfinder 12, 47
Viewfinder Displays 51

W Wide Angle 17
Wireless Controller 18

Z Zooming 17